

FIG. 1A PRIOR ART

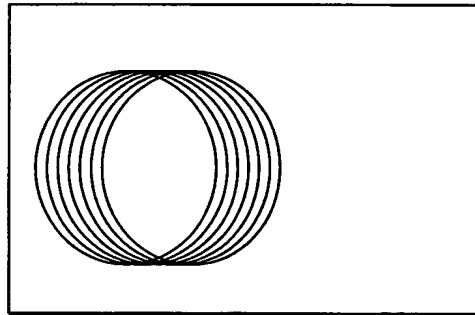


FIG. 1B PRIOR ART

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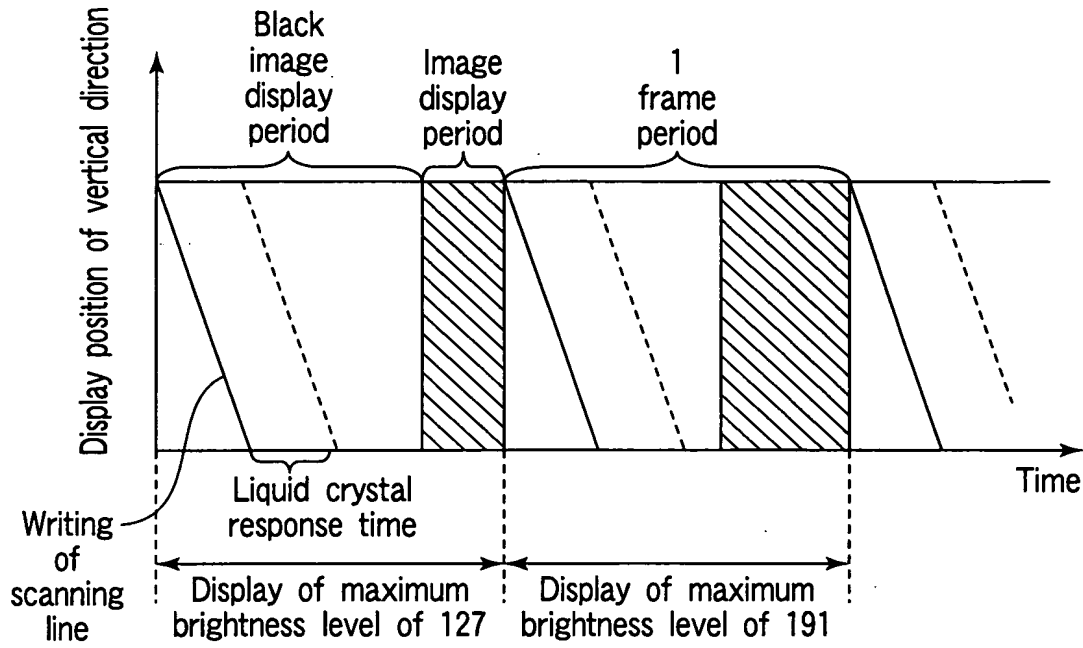


FIG. 4

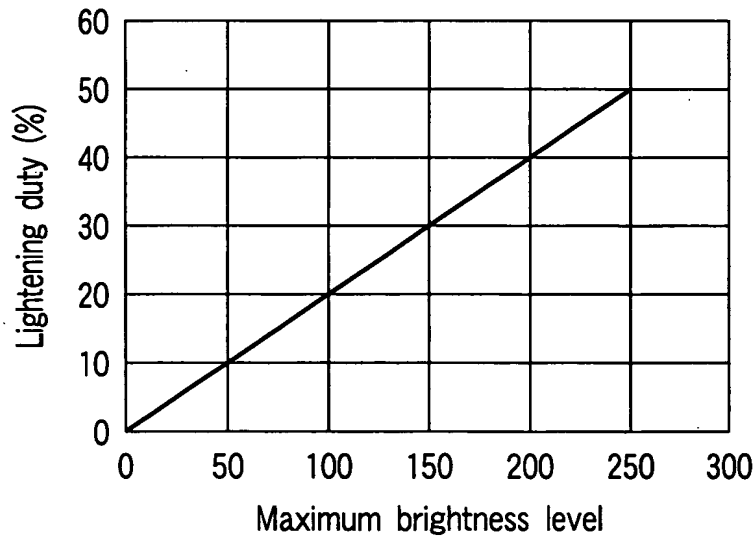


FIG. 5

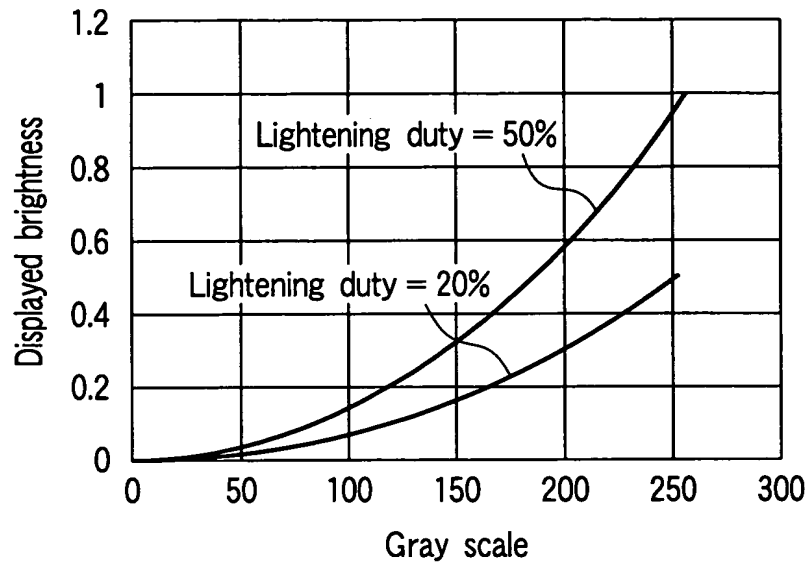


FIG. 6

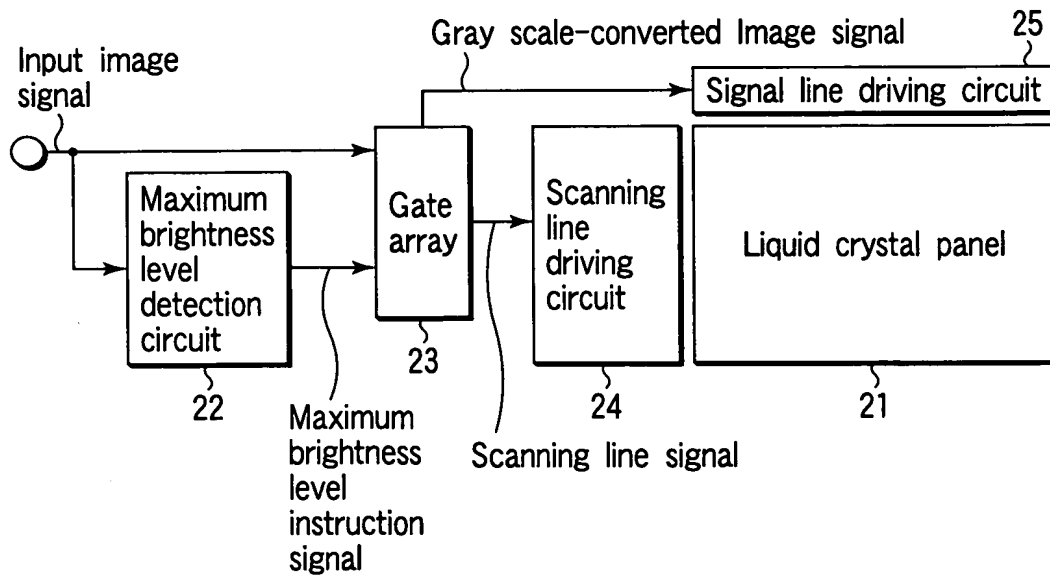


FIG. 7

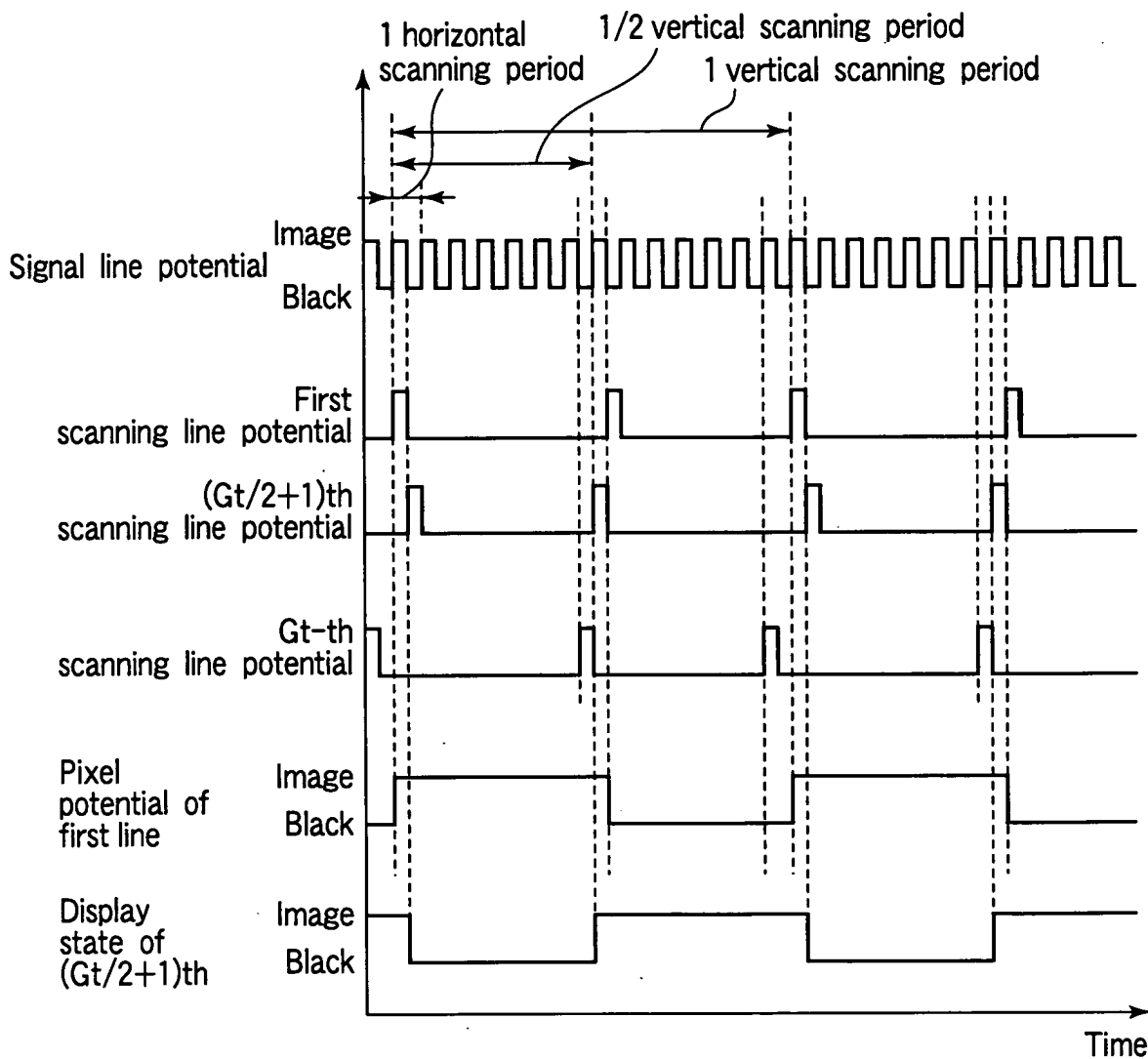


FIG. 8

FIG. 9A

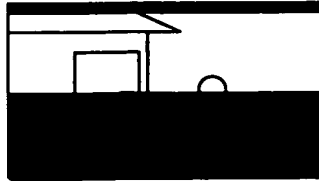
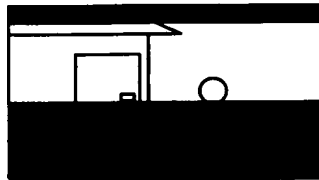


FIG. 9B



...

FIG. 9C

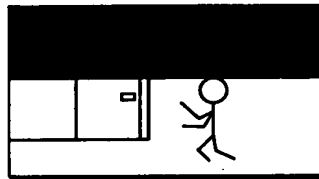
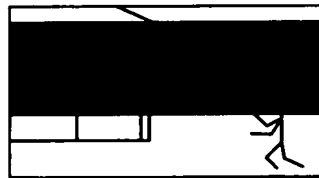
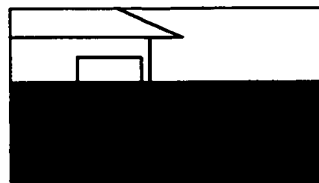


FIG. 9D



...

FIG. 9E



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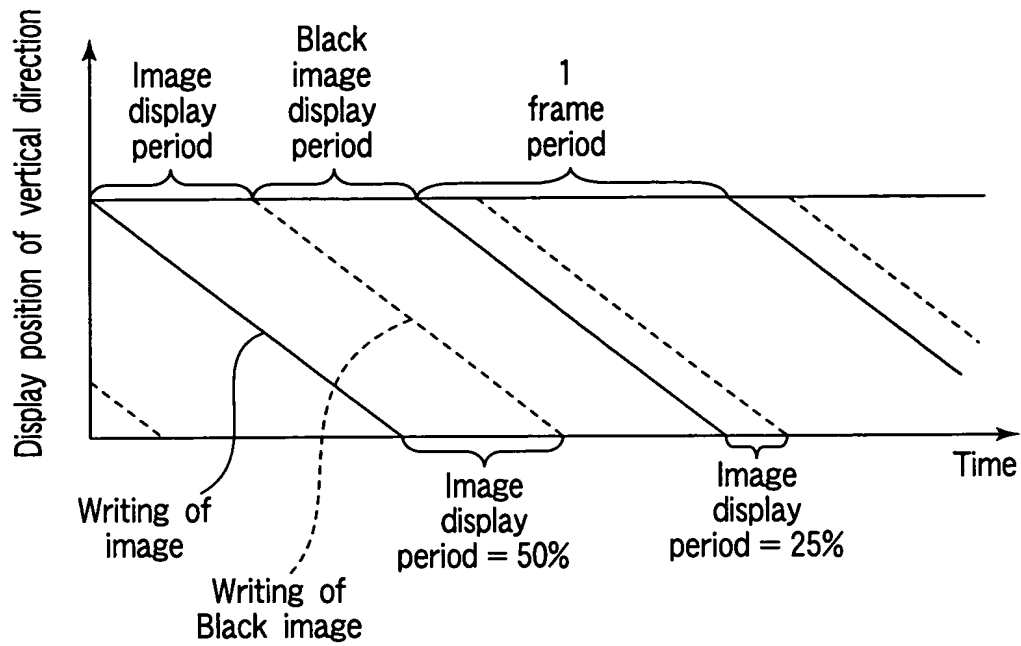


FIG. 10

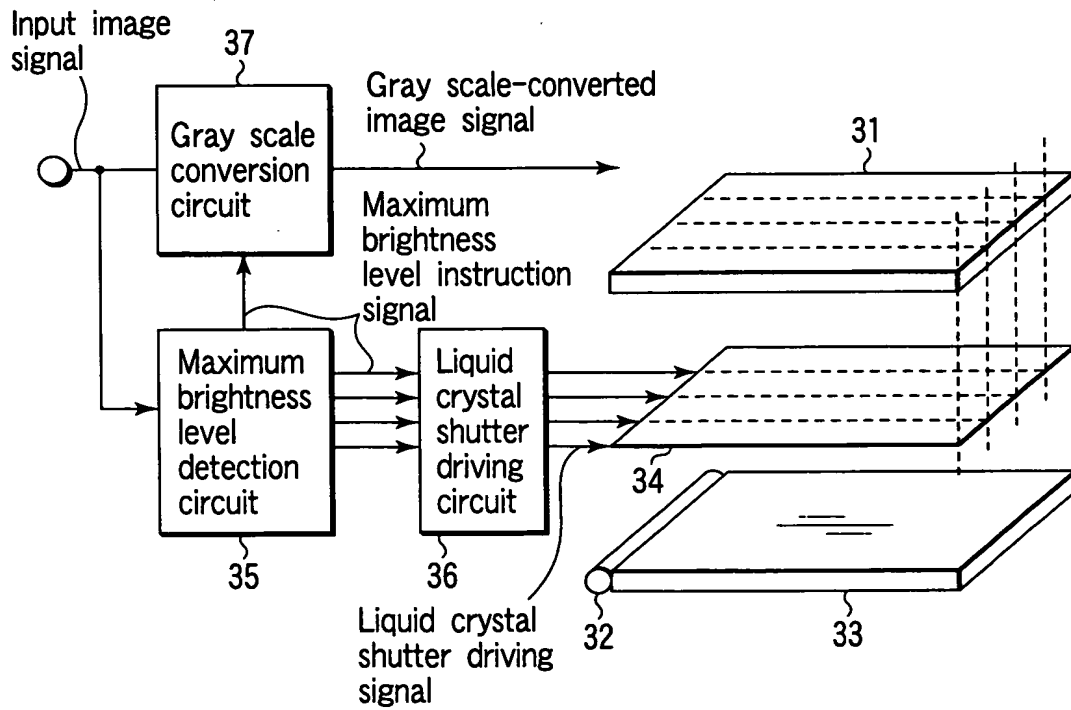


FIG. 30

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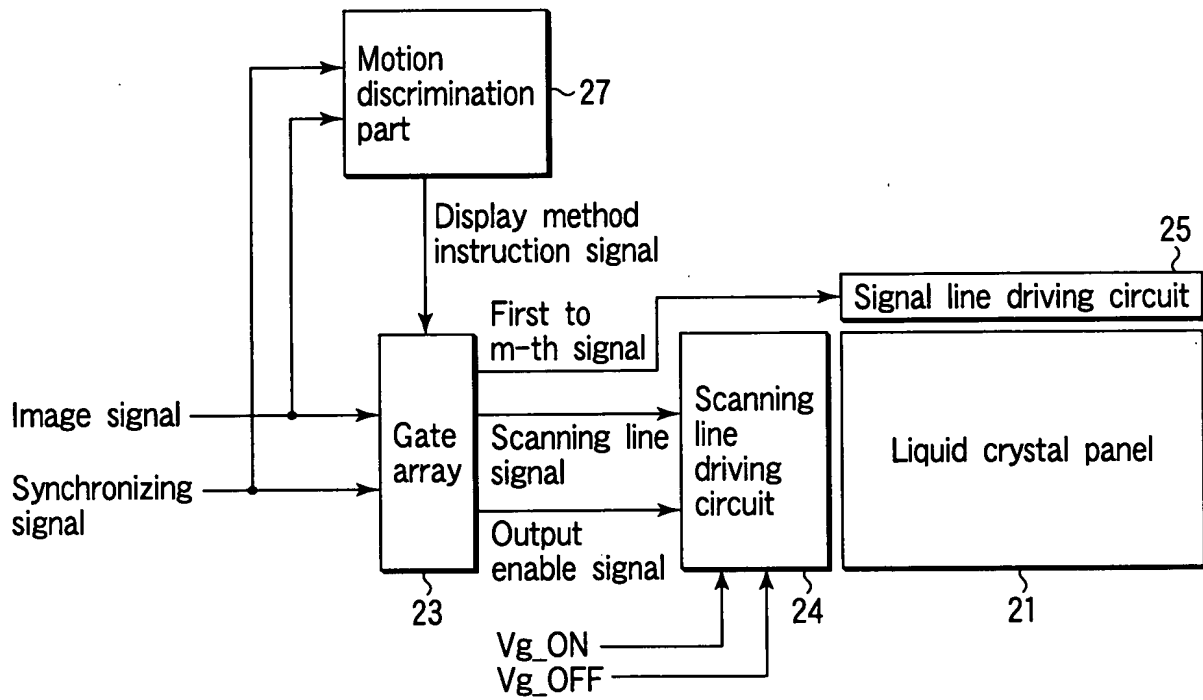


FIG. 11

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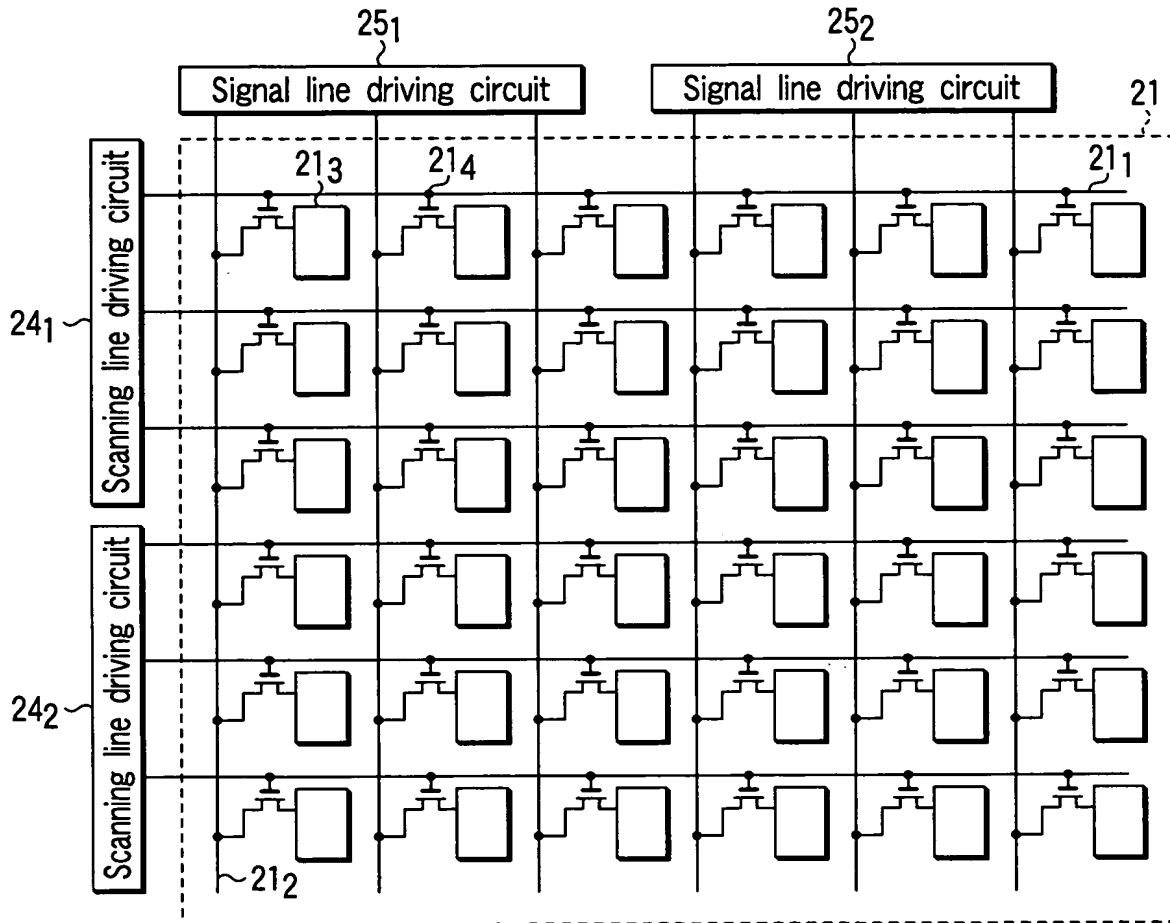


FIG. 12



Negative voltage

FIG. 13A



No-voltage

FIG. 13B



Positive voltage

FIG. 13C

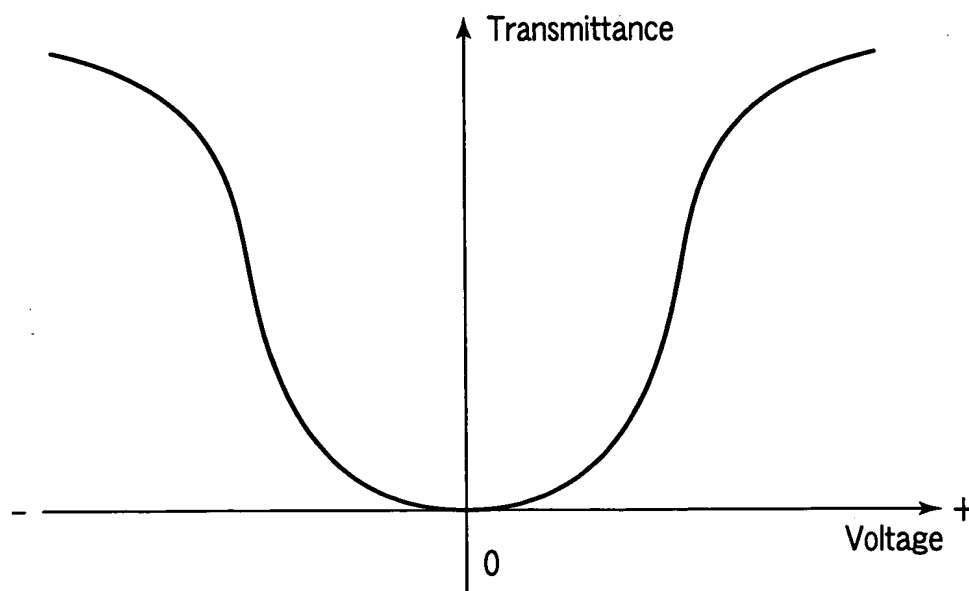


FIG. 14

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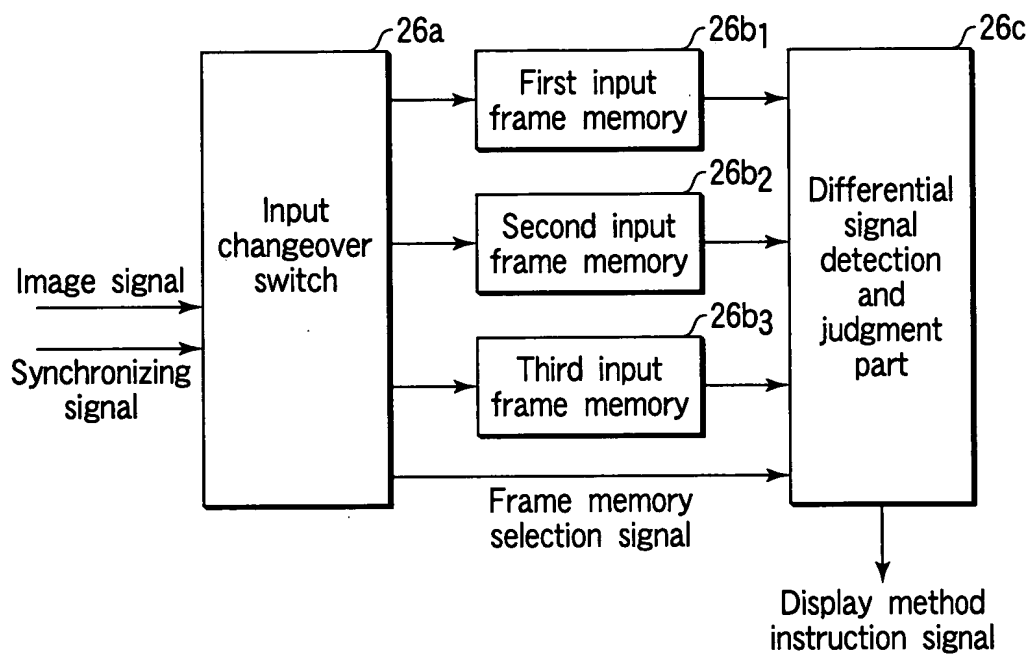


FIG. 15

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FIG. 16A

FIG. 16B

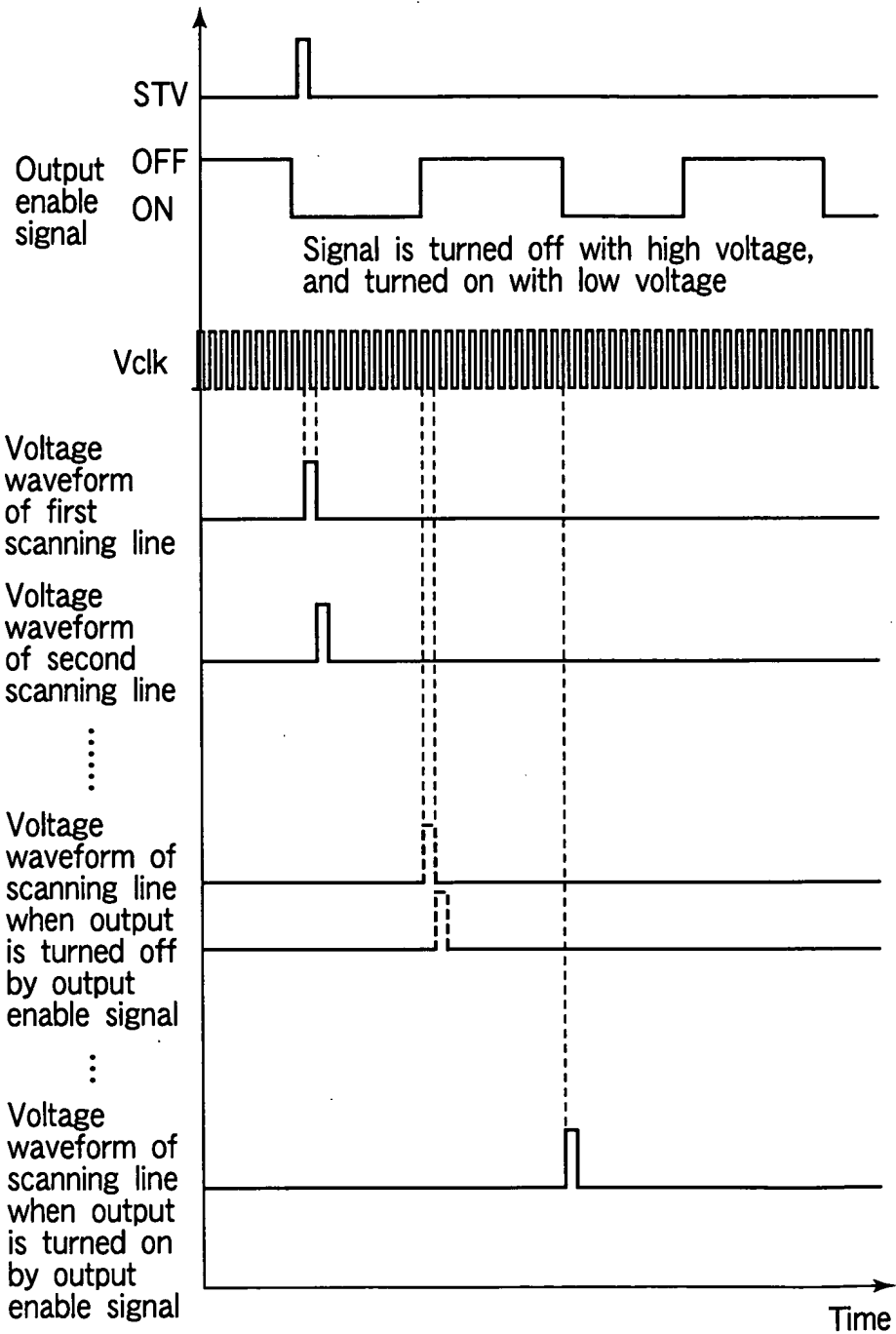
FIG. 16C

FIG. 16D

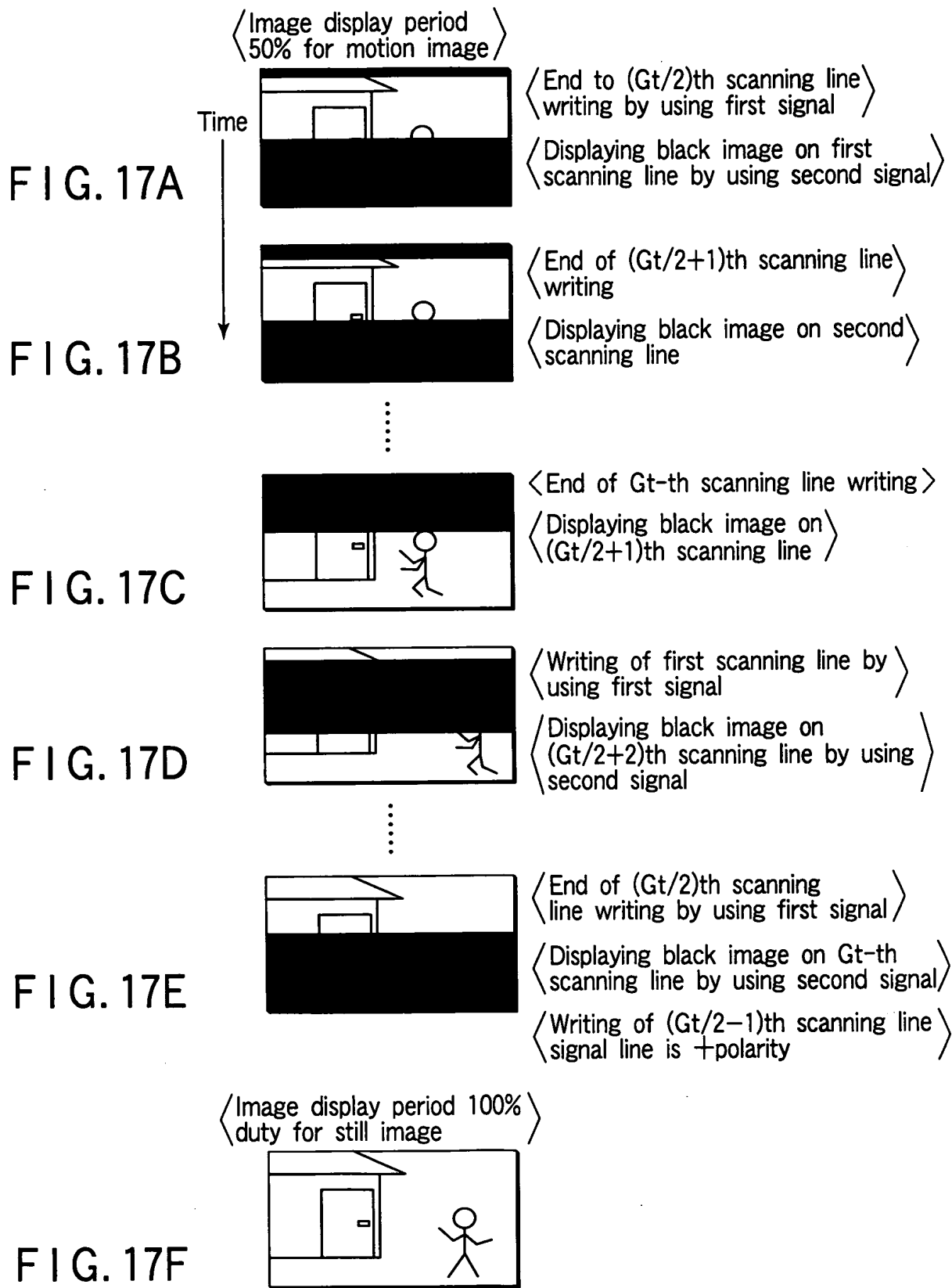
FIG. 16E

FIG. 16F

FIG. 16G



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Relation between number of scanning lines,
adjustment accuracy, and minimum duty

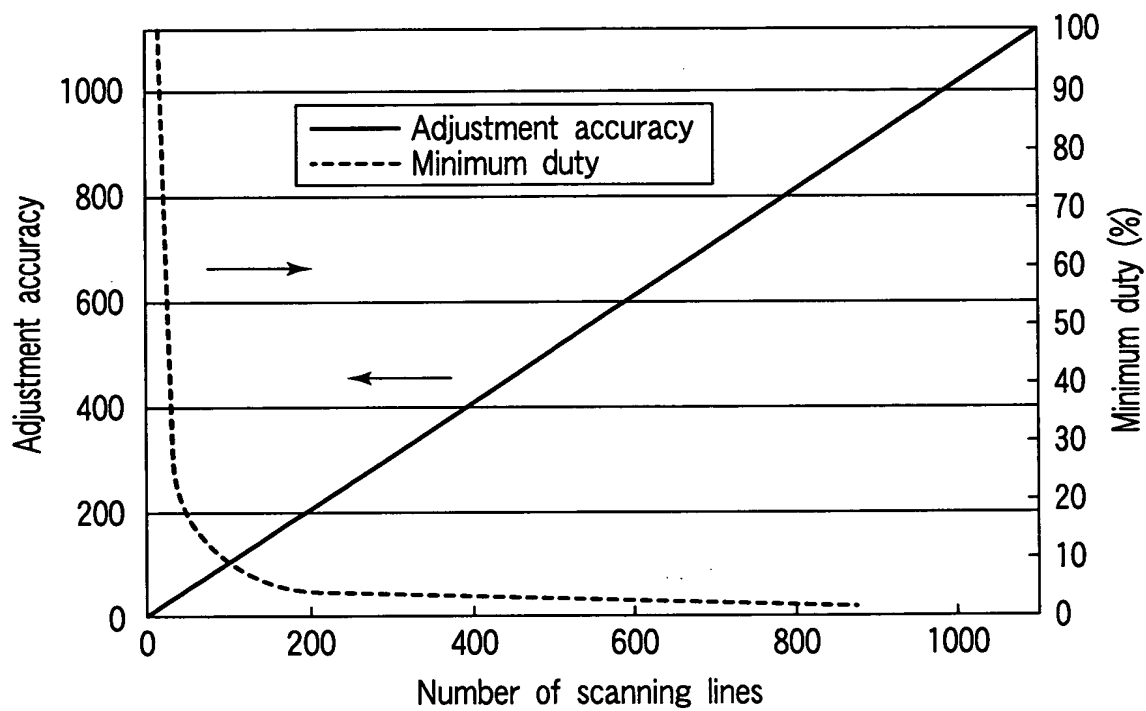


FIG. 19

FIG. 20A

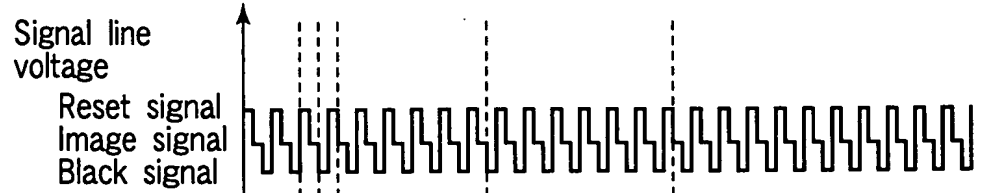


FIG. 20B

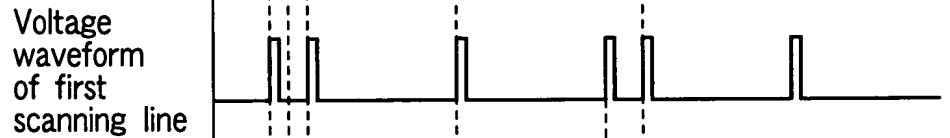


FIG. 20C

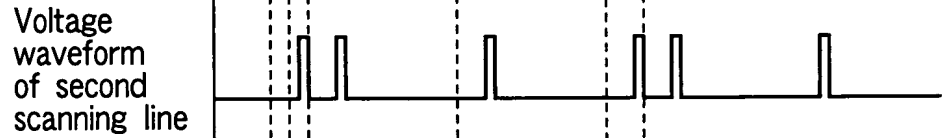


FIG. 20D



FIG. 20E

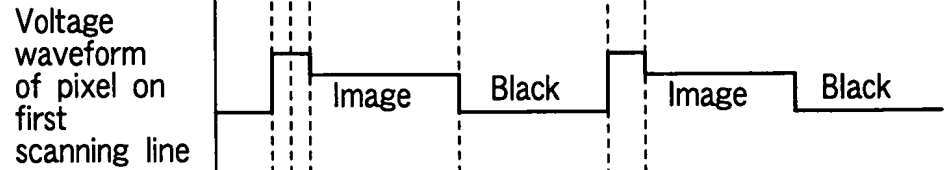
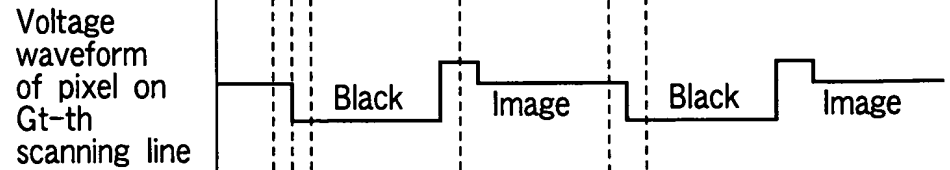


FIG. 20F



Reset period of pixels on first scanning line

Image display period of pixels on first scanning line

Black display period of pixels on first scanning line

1 frame period

Time

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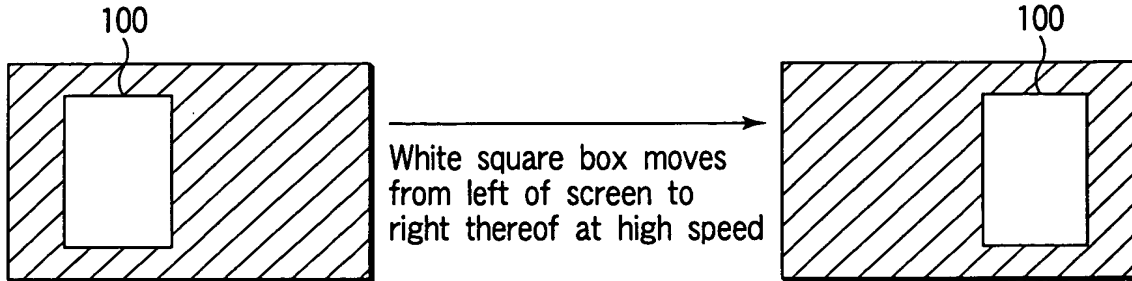
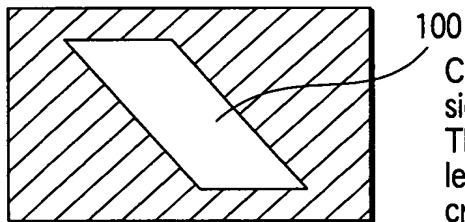


FIG. 21A

FIG. 21B

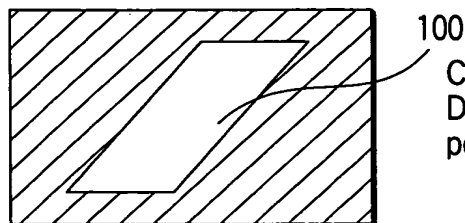
Line sequential processing
when creating screen and
plane sequential processing
when displaying image



Creation time is different at an upper and lower side of screen.
The image is created when moving body exists in left side at upper side of screen, and the image is created when moving object is moved to right while going under the screen

FIG. 21C

plane sequential processing
when creating screen and
line sequential processing
when displaying image



Creation time is same at an upper and lower screen.
Display timing difference occurs because scanning is performed from upper to lower screen sequentially

FIG. 21D

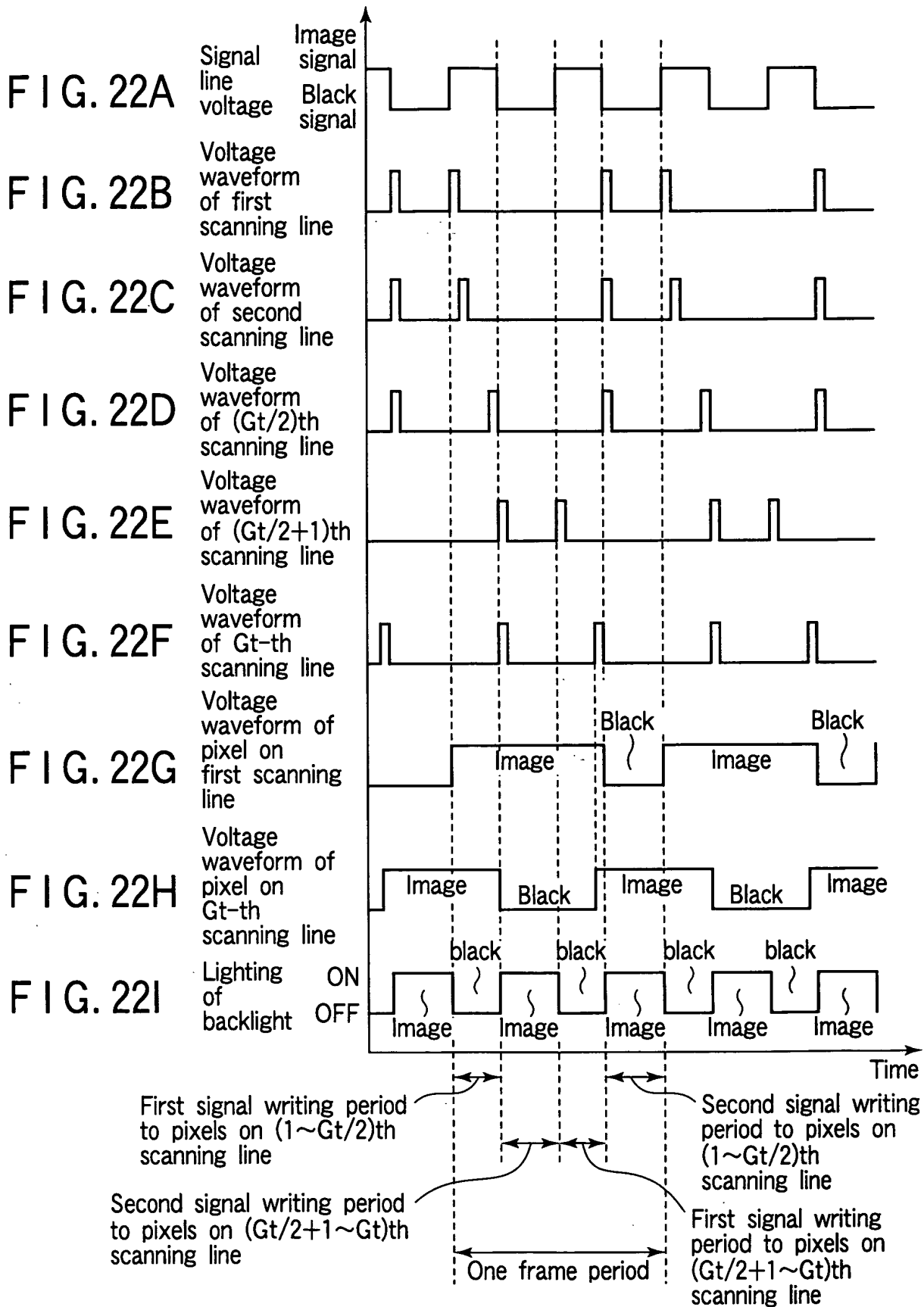
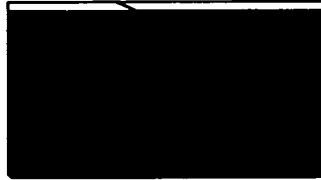


FIG. 22A

FIG. 23A

<First sub-field>

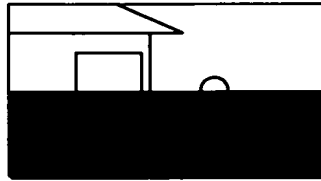


<Writing first signal to pixels on
first to $Gt/2$ -th scanning lines>

<black display for backlight OFF>

FIG. 23B

<Second sub-field>



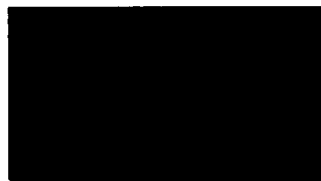
<Writing end of first signal to pixels
on first to $Gt/2$ -th scanning lines>

<Writing black display signal to pixels
on $(Gt/2+1)$ th to Gt -th scanning
lines>

<Backlight is turned on and imaged
is displayed>

FIG. 23C

<Third sub-field>

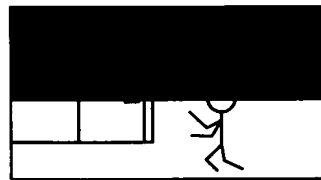


<Writing first signal to pixel on
 $(Gt/2+1)$ th to Gt -th scanning lines>

<black display for backlight OFF>

FIG. 23D

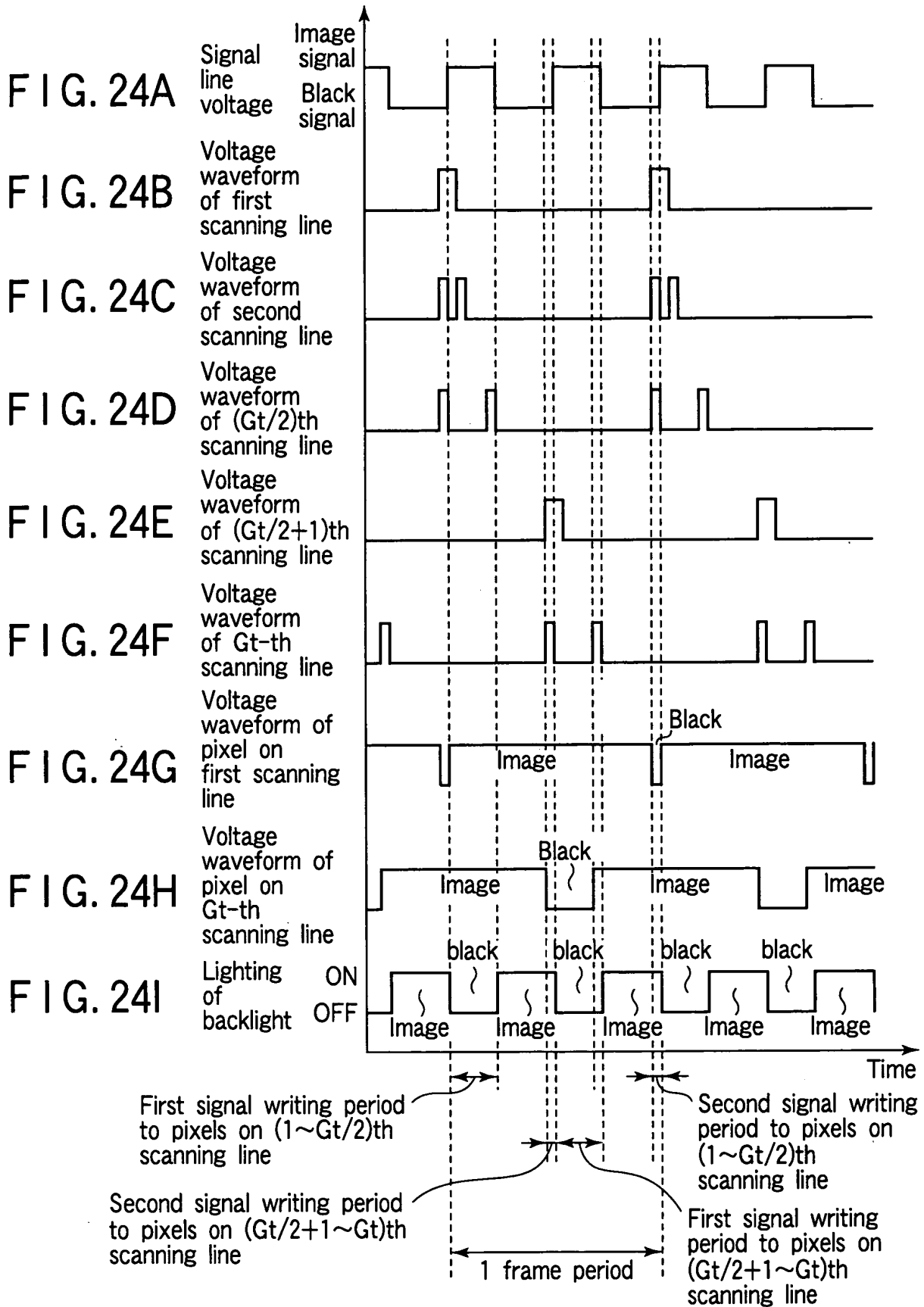
<Fourth sub-field>



<Writing end of first signal to pixels
on $(Gt/2+1)$ th to Gt -th scanning
lines>

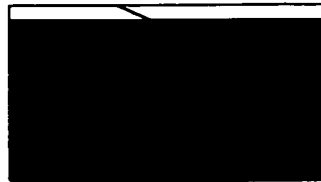
<Writing black display signal to pixels
on first to $Gt/2$ -th scanning lines>

<Backlight is turned on and imaged
is displayed>



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<First sub-field>

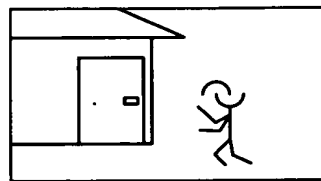


<Writing first signal to pixels on
first to $Gt/2$ -th scanning lines>

<Black display for backlight OFF>

FIG. 25A

<Second sub-field>



<Writing end of first signal to pixels
on first to $Gt/2$ -th scanning lines>

<Image is displayed by turning on
backlight>

There is a slight time gap between
image on $(Gt/2+1)$ th to Gt -th
scanning lines and image on first to
 $Gt/2$ -th scanning lines because
image on $(Gt/2+1)$ th to Gt -th
scanning lines is at previous frame
image

FIG. 25B

<Third sub-field>

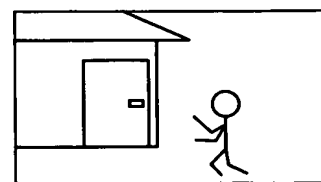


<Writing first signal to pixel on
 $(Gt/2+1)$ th to Gt -th scanning
lines>

<Black display for backlight OFF>

FIG. 25C

<Fourth sub-field>



<Writing end of first signal to pixels
on $(Gt/2+1)$ th to Gt -th scanning
lines>

<Backlight is turned on and imaged
is displayed>

There is no time gap between
image on $(Gt/2+1)$ th to Gt -th
scanning lines and image on first to
 $Gt/2$ -th scanning lines because
image on $(Gt/2+1)$ th to Gt -th
scanning lines is at same frame
image as on first to $Gt/2$ -th
scanning lines

FIG. 25D

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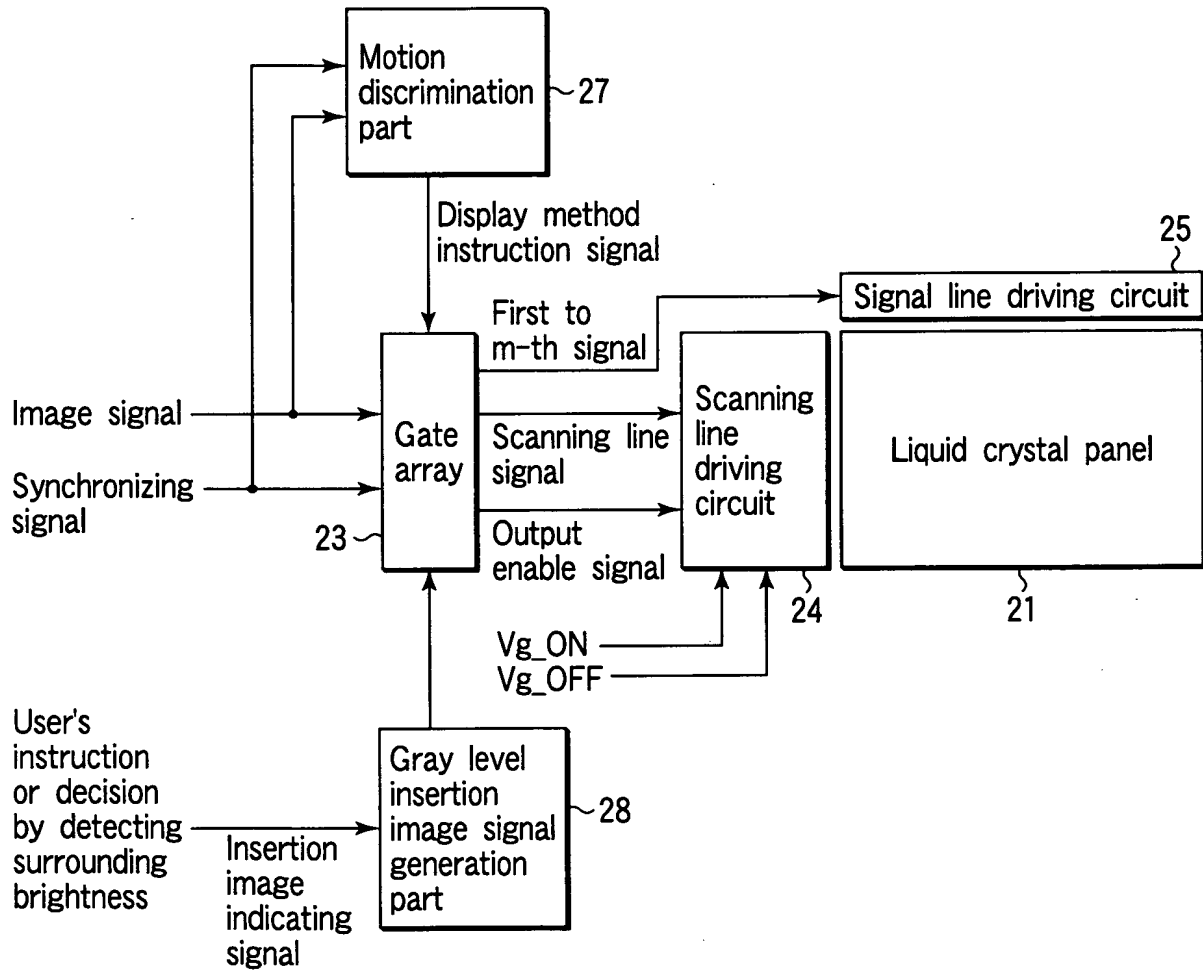


FIG. 26

09899220.070601

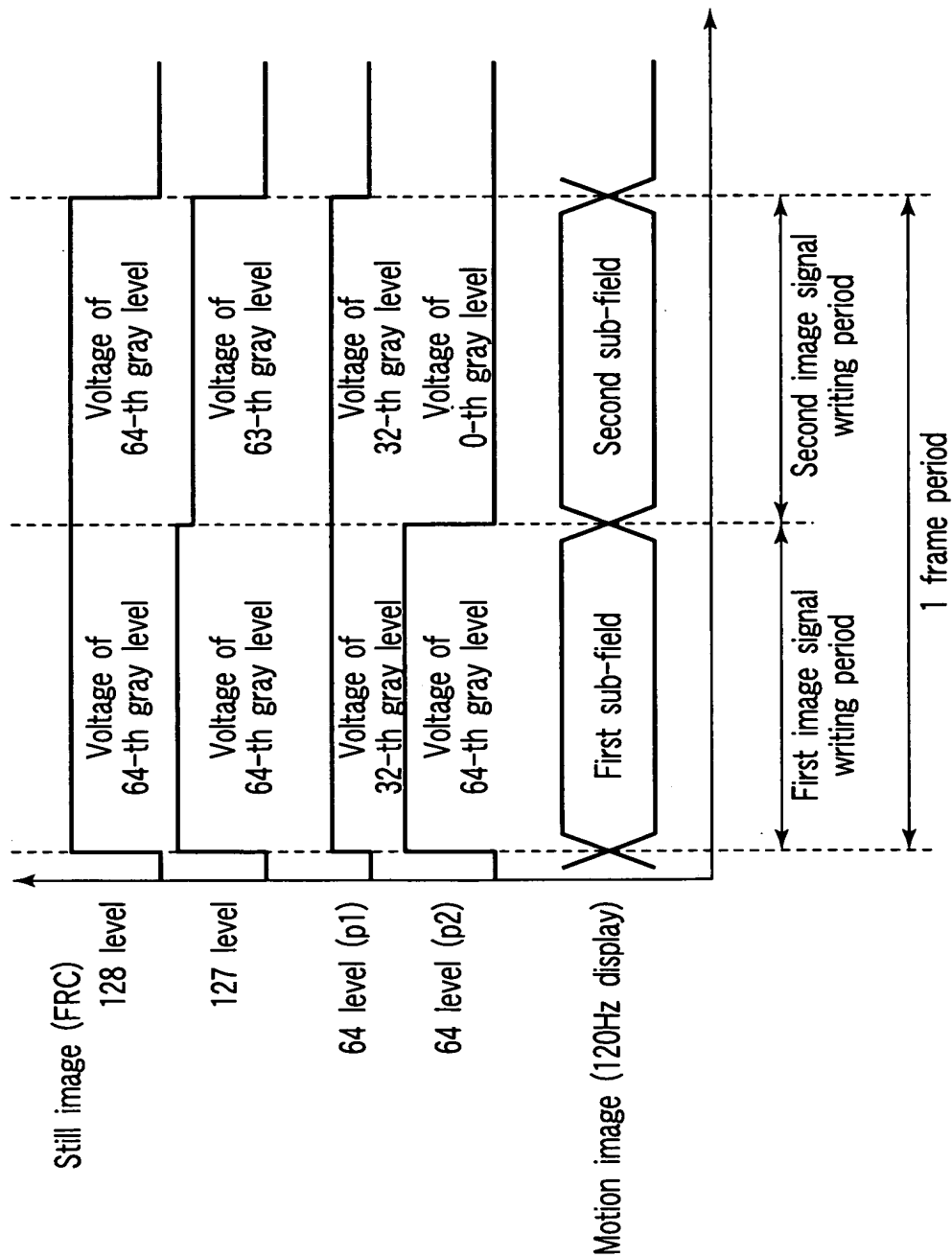


FIG. 27

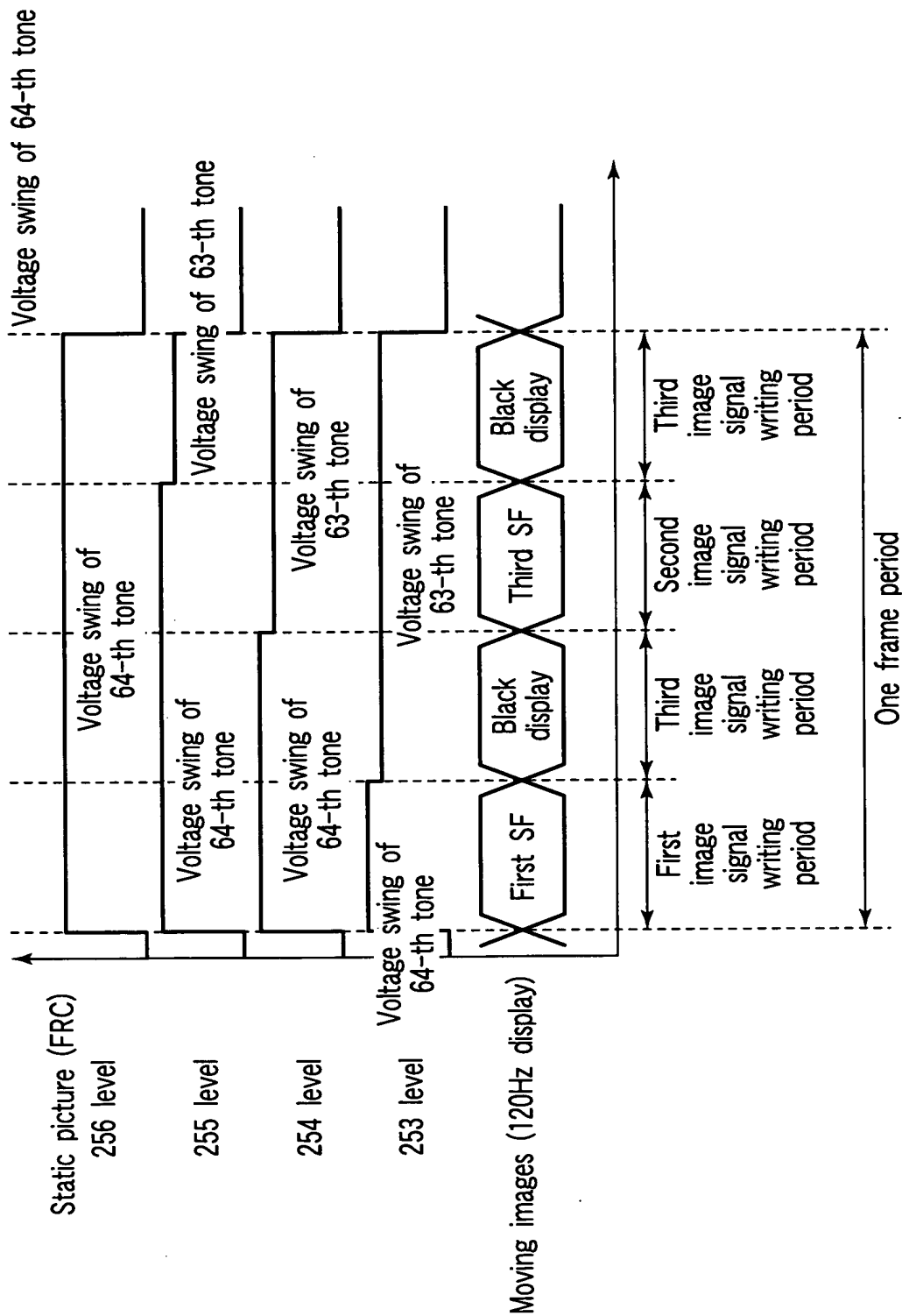


FIG. 28

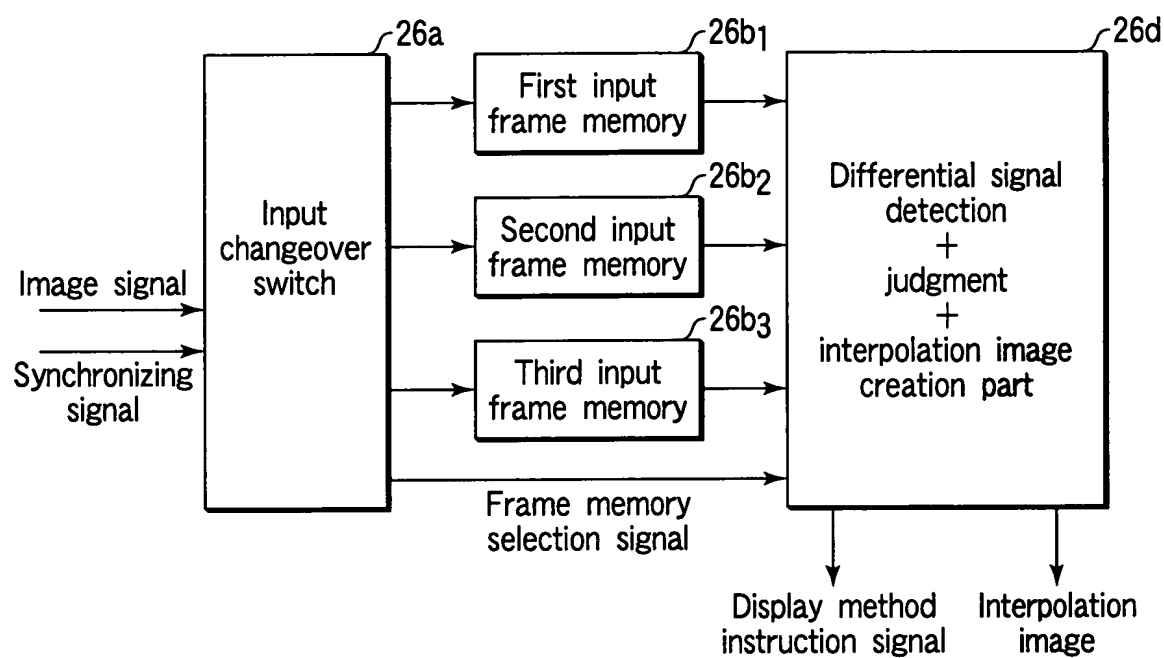


FIG. 29

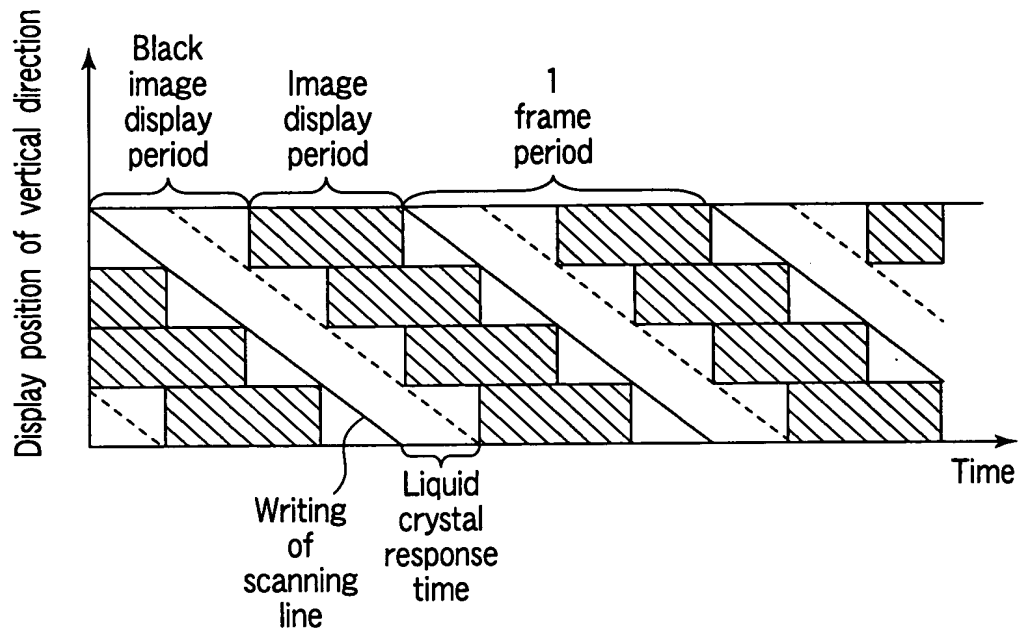


FIG. 31

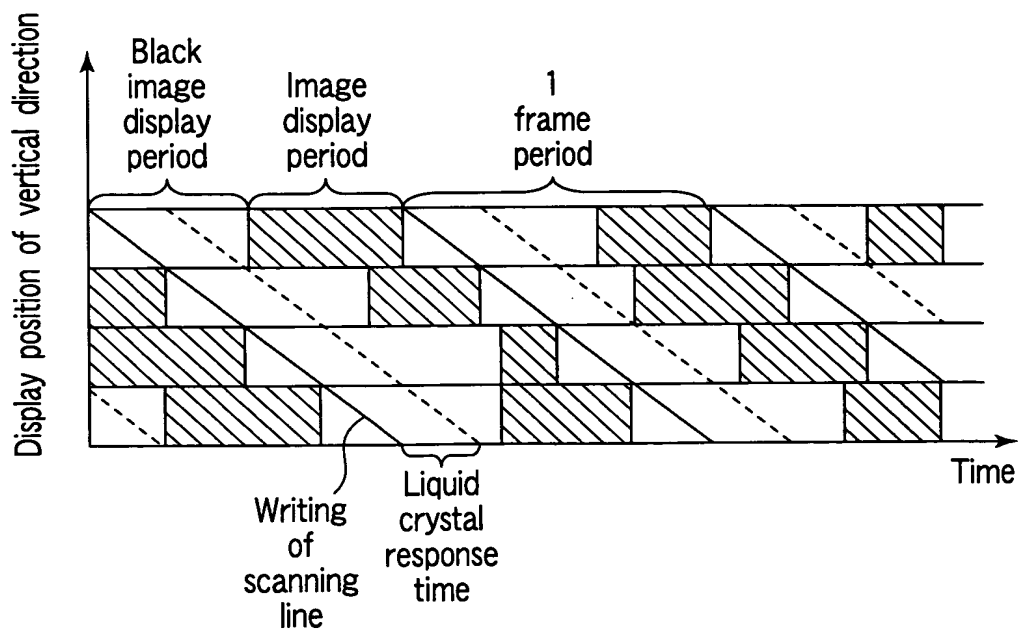


FIG. 32

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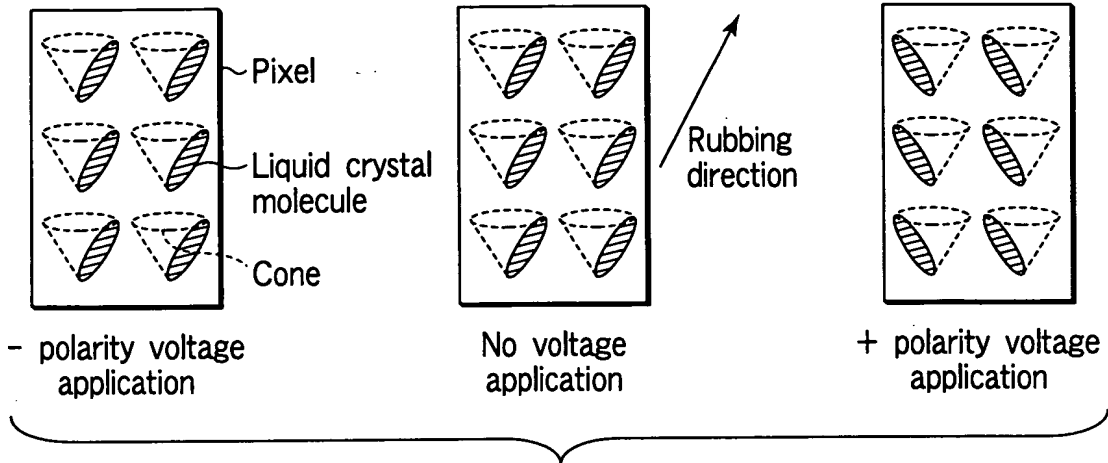


FIG. 33A

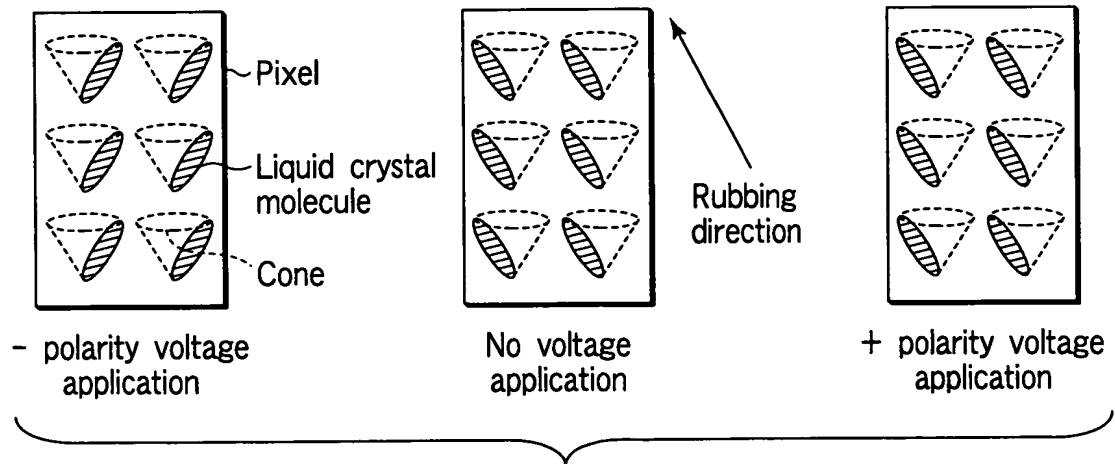
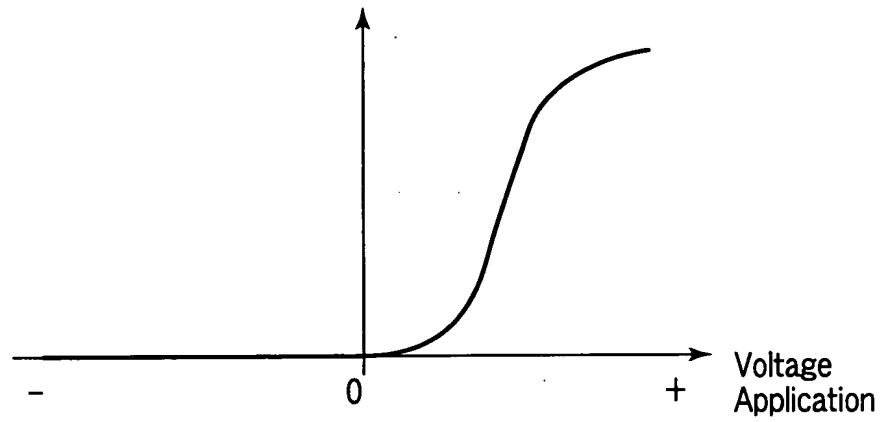


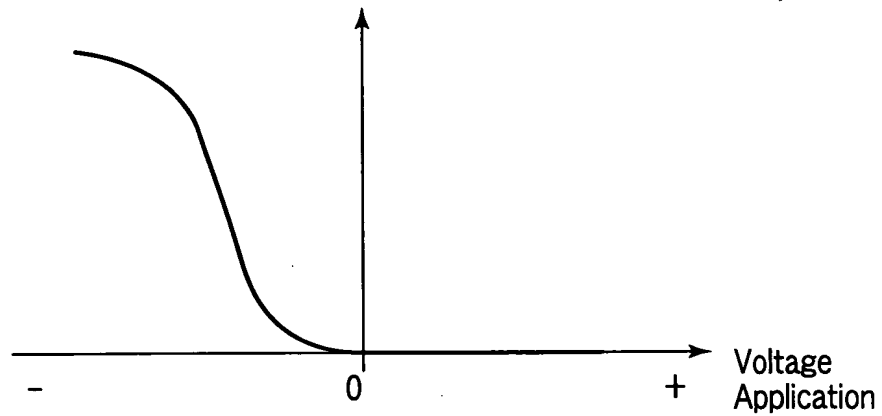
FIG. 33B

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First alignment

FIG. 34A



Second alignment

FIG. 34B

09899220-070601



FIG. 35

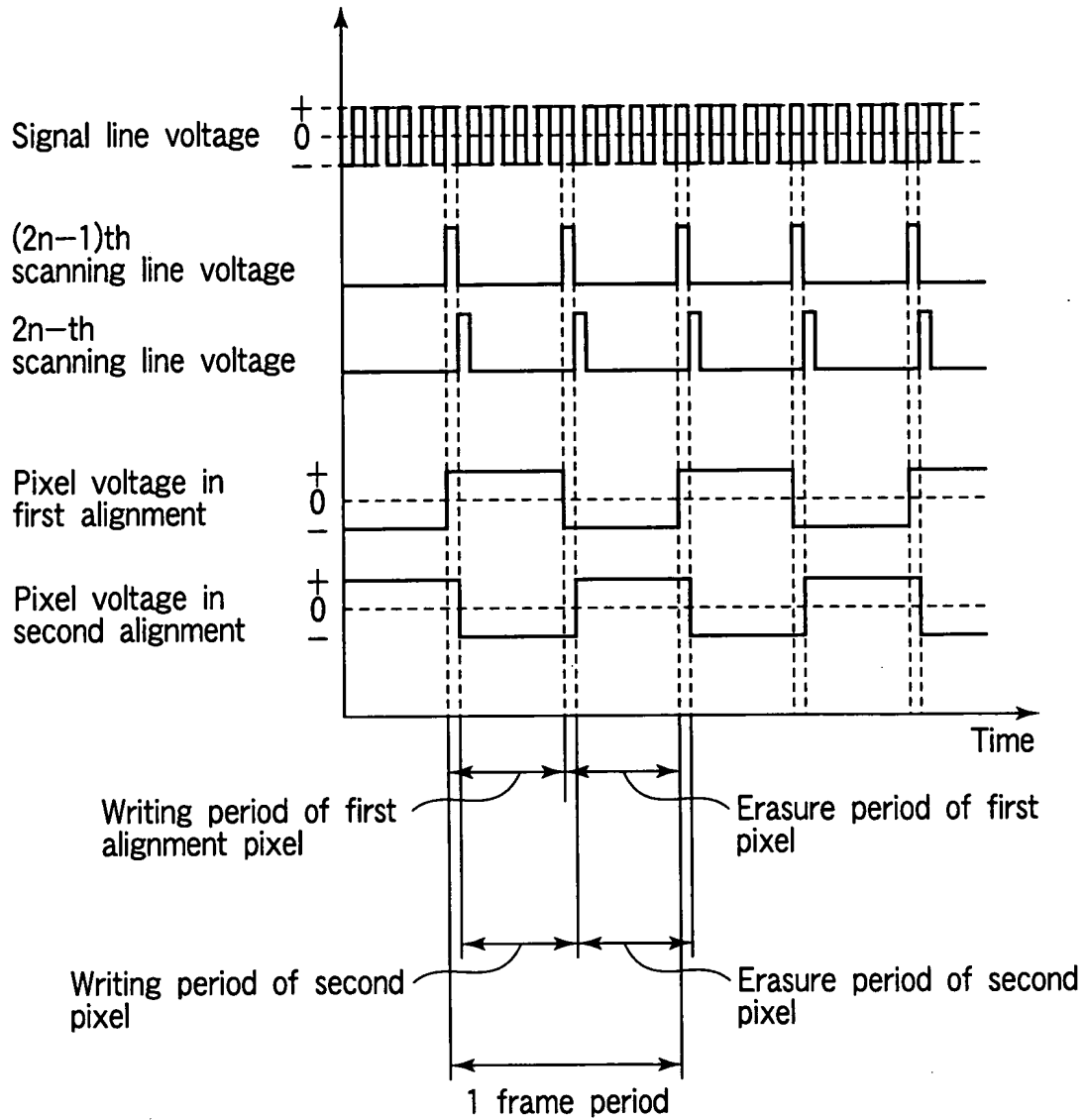
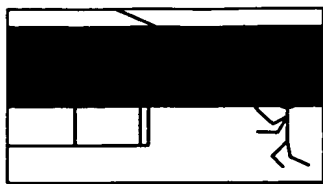


FIG. 36

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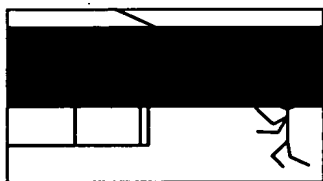
FIG. 37A



Writing of First scanning line;
signal is + polarity

First scanning line is in first and can be written in + polarity. Image of previous field remains at lower side of screen

FIG. 37B



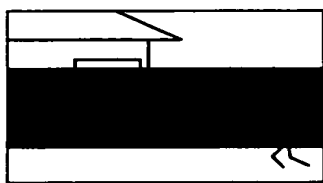
Writing of Second scanning line;
signal is - polarity

Second scanning line is in second and can be written in - polarity

Time
↓

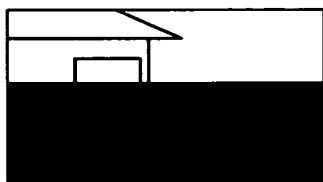
⋮

FIG. 37C



⋮

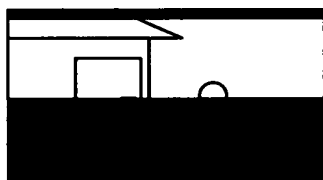
FIG. 37D



Writing of $(T/2-1)$ th scanning line;
signal is + polarity

End of writing to upper half

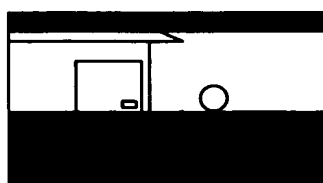
FIG. 37E



Writing of $T/2$ -th scanning line;
signal is - polarity

First scanning line is turned on at same time. $T/2$ -th scanning line is written in - polarity, and first scanning line is erased by - polarity

FIG. 37F

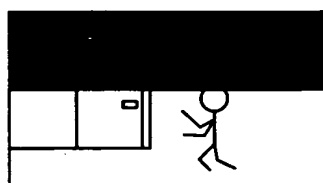


Writing of $(T/2+1)$ th scanning line;
signal is + polarity

Second scanning line is turned on at same time. $(T/2+1)$ th scanning line is written in + polarity, and second scanning line is erased by + polarity

⋮

FIG. 37G

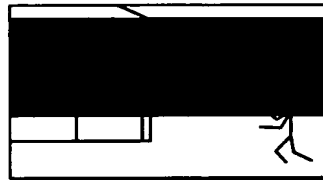


Writing of T -th scanning line;
signal is - polarity

$(T/2+1)$ th scanning line is turned on at same time. Upper half of screen is erased

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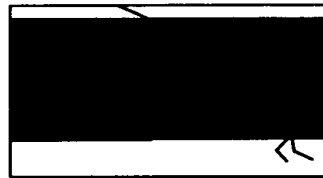
FIG. 38A



Writing of First scanning line;
 signal is + polarity

Image of previous field remains at
 lower quarter of screen

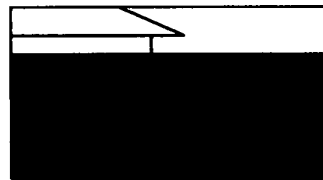
FIG. 38B



Time

⋮

FIG. 38C

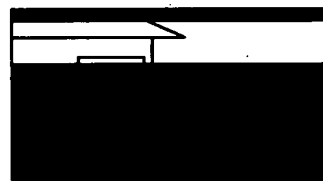


Writing of $(T/4-1)$ th scanning line;
 signal is + polarity

Upper quarter of screen is displayed

⋮

FIG. 38D



Writing of $T/4$ -th scanning line;
 signal is - polarity

First scanning line is erased

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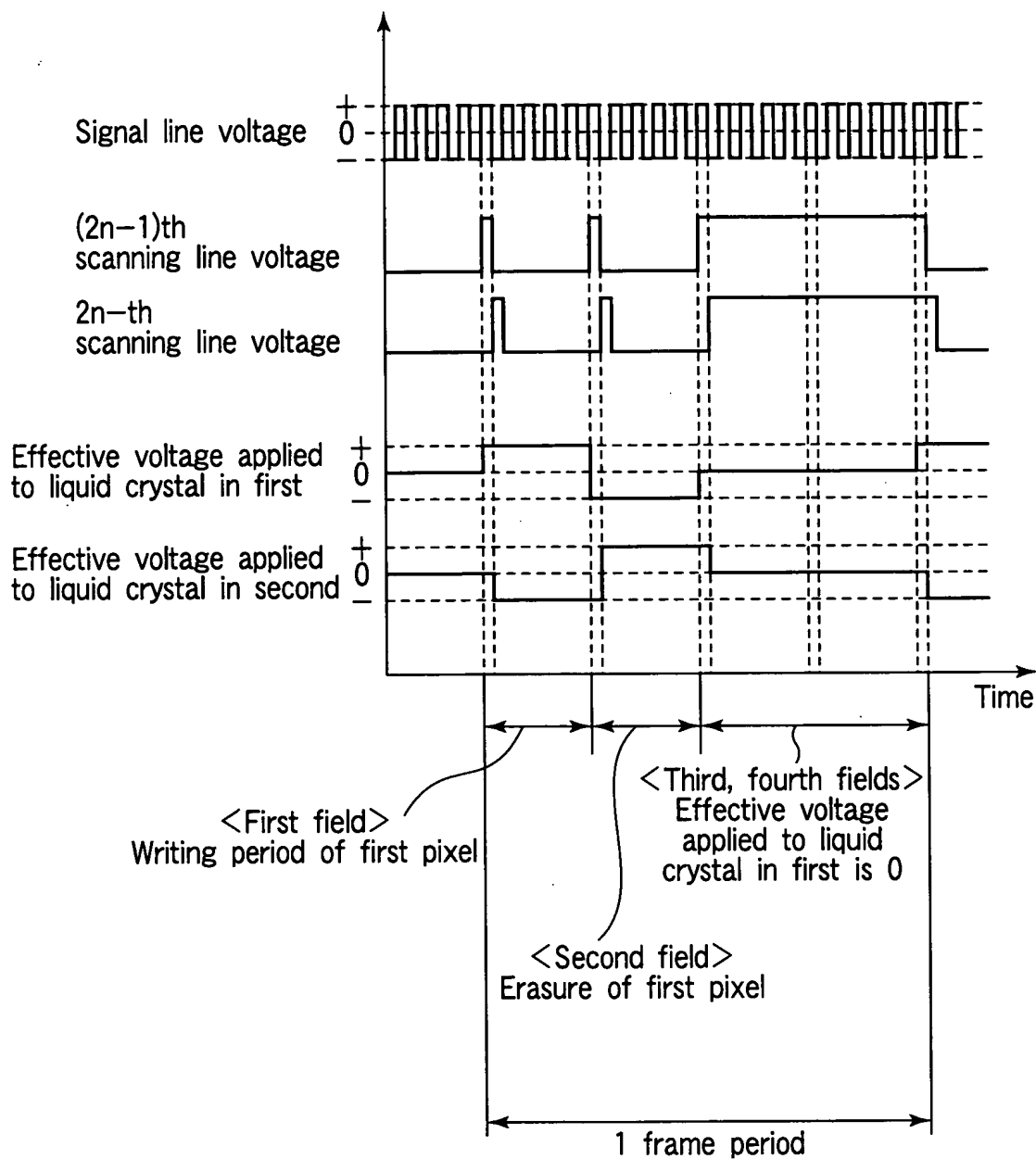


FIG. 39

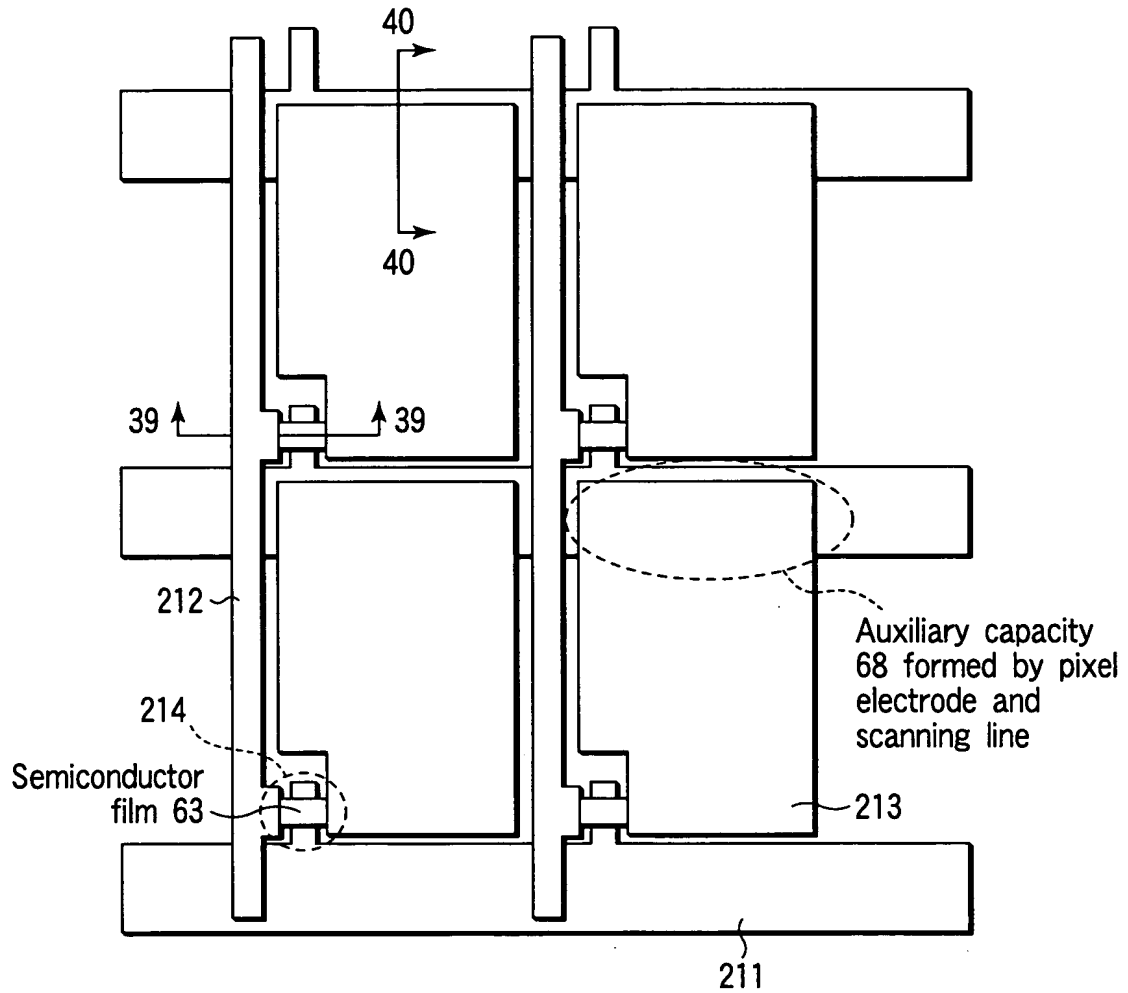


FIG. 40

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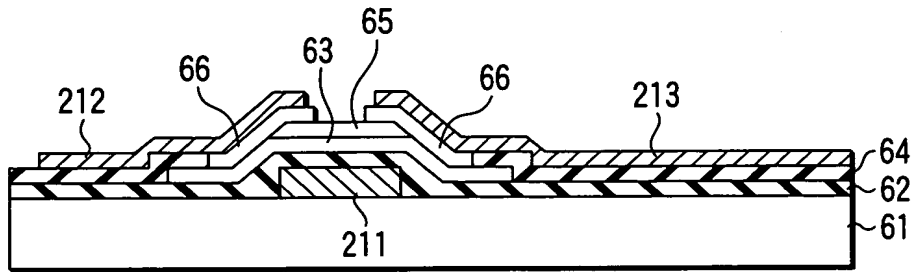


FIG. 41

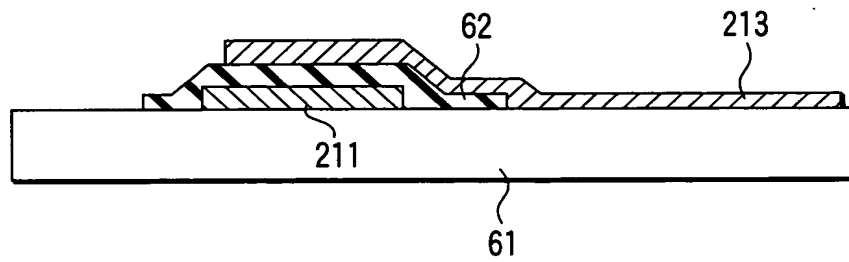


FIG. 42

09399220.070601

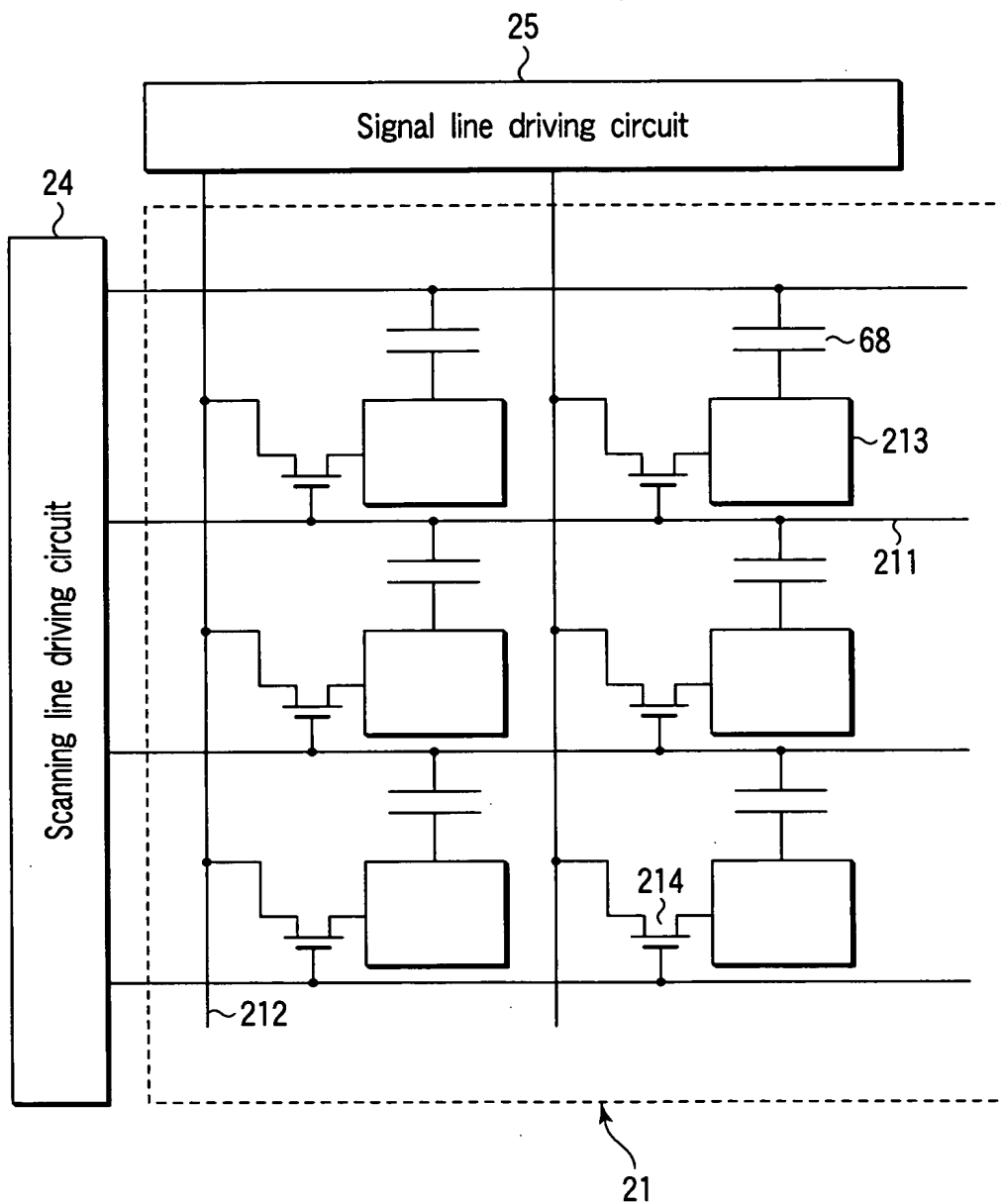


FIG. 43

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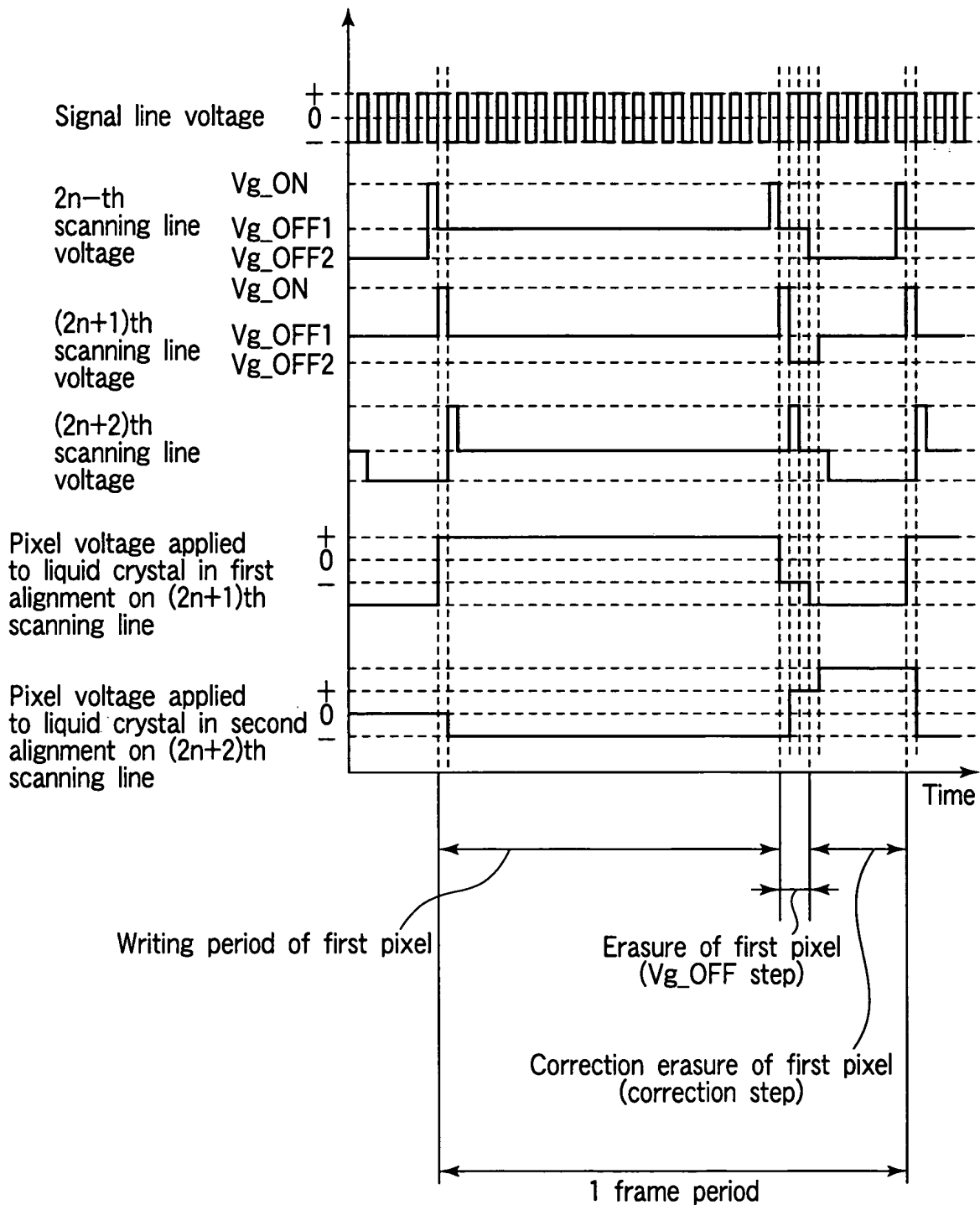


FIG. 44

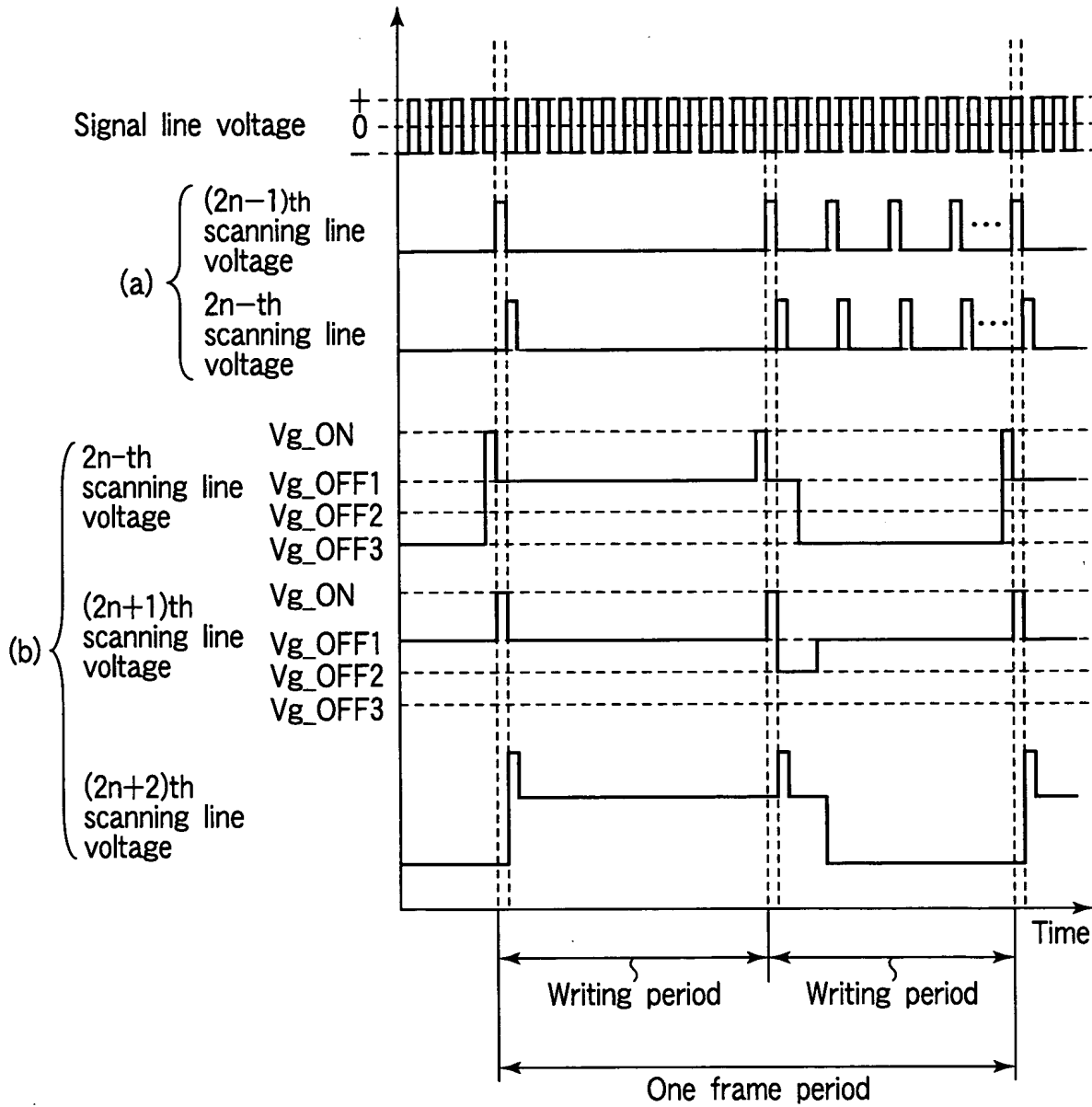


FIG. 45

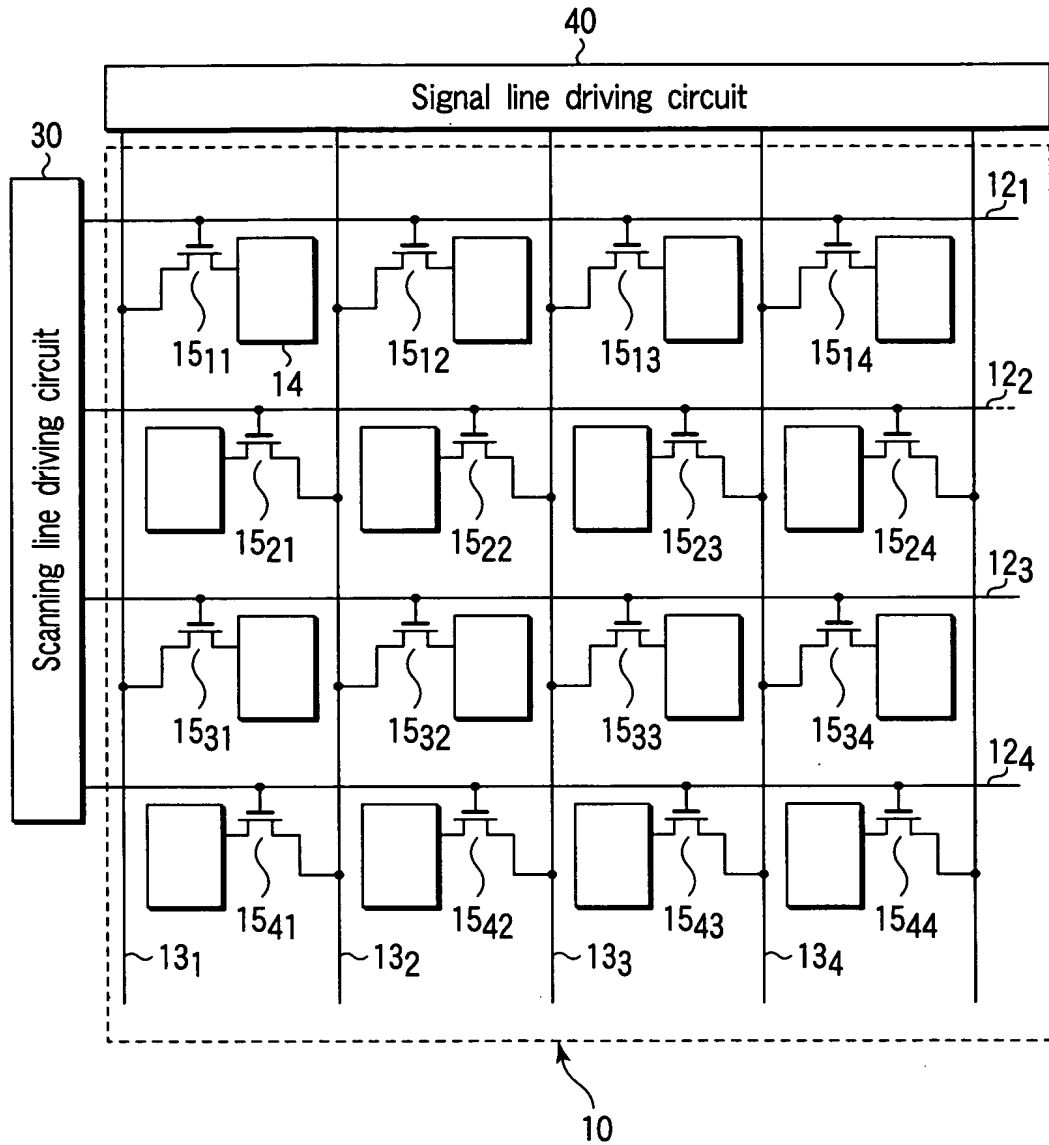


FIG. 46

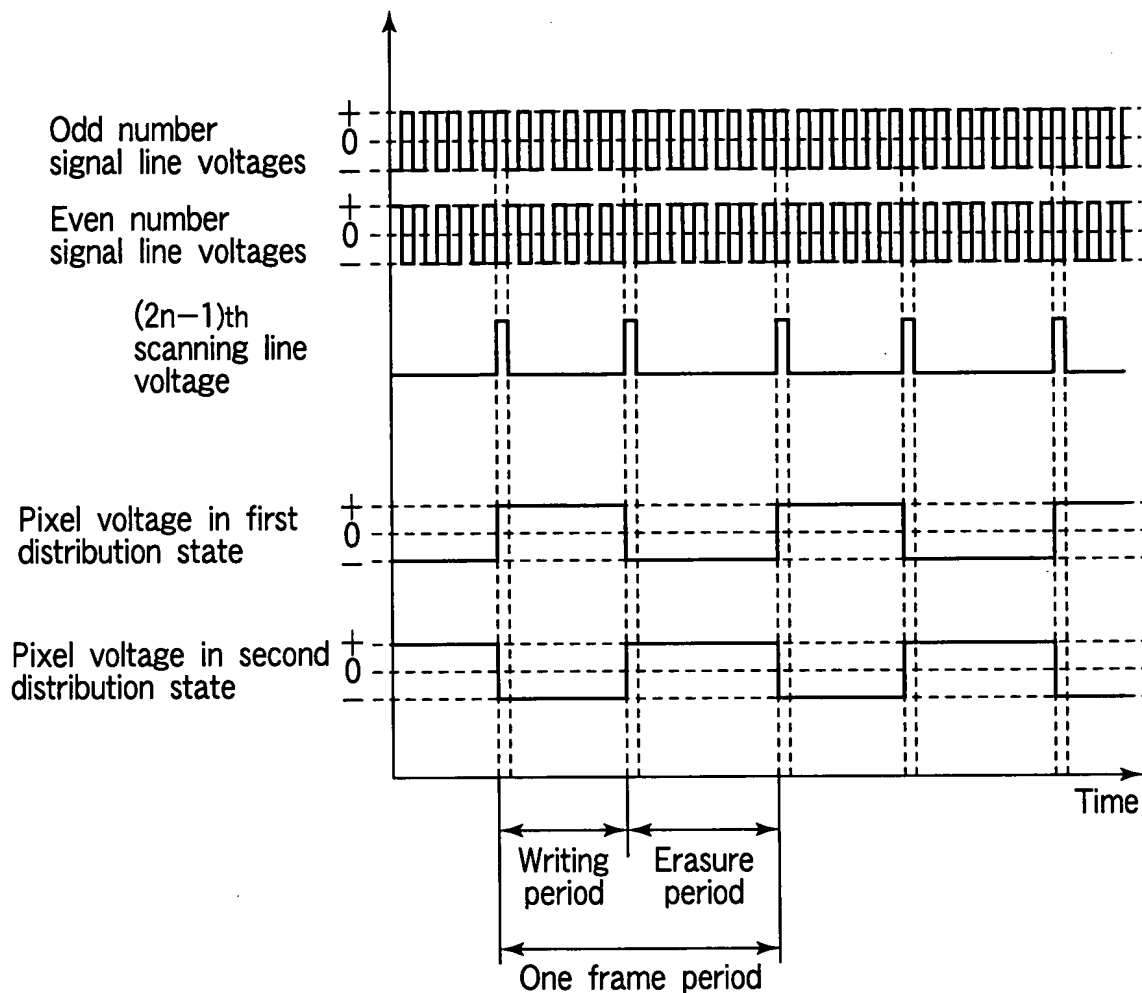


FIG. 47

09899220-070601

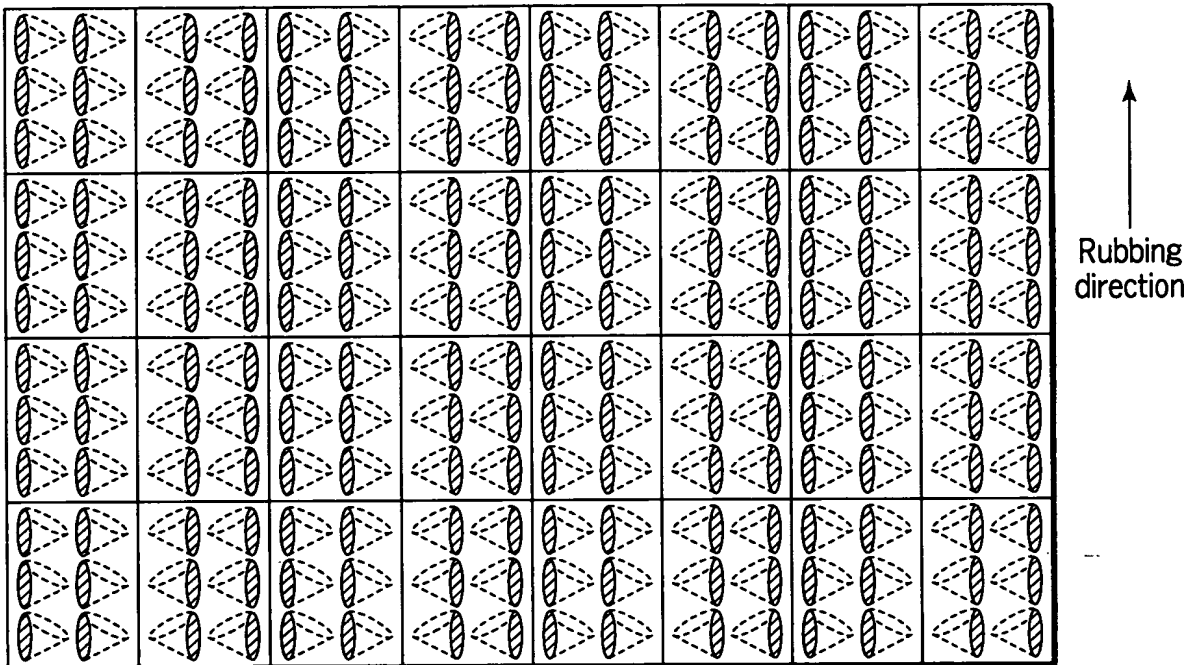


FIG. 48